Insitute For Stem Cell Science and Regenerative Medicine Autonomous insitute of the Department of Biotechnology, Government Of India



Ref: INS/W-5006/2023-2024(M) Date: 21/04/2023

ENQUIRY

Dear Sirs,

Γ

Please let us have your lowest Quotation for the following materialises.

SI.No	Cat.No	Item Description	Make/Model	Item Qty	UOM
1		Supply of 3.5C x 150 Sqmm LT XPLE insulated cable, multi-stranded, Circular shaped, PVC inner & outer sheath, voltage grade 1100V, round wire armoured cable confirming to IS: 7098 with latest amendments. The cable shall bear ISI certification mark.	As per specifications	70.00	Mtrs.
2		Supply of 3.5C x 185 Sqmm LT XPLE insulated cable, multi-stranded, Circular shaped, PVC inner & outer sheath, voltage grade 1100V, round wire armoured cable confirming to IS: 7098 with latest amendments. The cable shall bear ISI certification mark.	As per specifications	600.00	Mtrs.
3		Laying of 4 runs x 3.5 x 185 Sqmm LT XLPE cable in the existing trench 1.1 kV grade armoured aluminum conductor cable in existing trench including transportation of cable to site, removing of trench covers and reclosing the covers after laying the cables in good condition with supply of all necessary materials such as brackets, clamps, MS/GI spacers complete as required and as directed by EIC.	ISI marked	90.00	Mtrs.
4	_*	Laying of 4 runs x 3.5 x 185 Sqmm LT XLPE cable 1.1 kV grade FRLS cables armoured aluminum conductor cables in ground, in all kind of soil, 750mm below ground level including transportation of cable to site excavation, refilling with sand and baked bricks On top and sides and providing cable route/joint markers complete	ISI marked	20.00	Mtrs.
5		Providing end terminations for 3.5 x 185Sqmm, 1.1kV grade XLPE insulated armoured, Aluminum conductor cables including supply of double compression Cable gland, lugs, neoprene bushes and other materials and tools required complete with terminal connections, earthing of glands and as required and as directed by EIC.	As per specifications	12.00	Nos.

Insitute For Stem Cell Science and Regenerative Medicine

Autonomous insitute of the Department of Biotechnology, Government Of India



Ref: INS/W-5006/2023-2024(M)

Date: 21/04/2023

<u>Remarks</u>: Tenders are invited under 2 part tender system from reputed Manufacturers / Suppliers for Supply, Installation, Commissioning and Technical Support "SUPPLY AND LAYING OF ELECTRICAL CABLES AS PER SPECIFICATIONS".

-	T		
- 17	NO	te	

The bids shall be enclosed in an envelope, and due date sealed duly marked "Tender for	**
ef No: The bids should be addressed and to be mailed to "THE HEAD-PURCHASE	".
ne bids are liable to be rejected if the sealed envelope is not addressed to "THE HEAD-PURCHASE" w	ith
ender Ref No and Item Description and due date. The bids delivered in person shall be dropped in Purcha	se
ction. If the bids are sent through courier or mail, it should reach by submission Date and Time and inStem w	ʻill
t be responsible for the delay.	

2. DUE DATE FOR SUBMISSION OF QUOTATION AGAINST THIS ENQUIRY IS 28/04/2023 2.30 PM

- 3. QUOTATIONS RECEIVED AFTER THE DUE DATE SHALL BE REJECTED.
- 4. The Validity of your quotation should be for 60 days from the date.
- 5.All duties,taxes,surcharge and cess as currently applicable must be sated in your quotation,seperately.Otherwise your quote is liable to be rejected.
- 6. Your quotation should indicate delivery period & Warranty period.
- 7.Delivery to be made to our Stores. Please indicate charges, if any extra. Transit Insurance should be done upto in Stores.
- 8.If you are unable to supply the quality, specifications or brand as mentioned in our enquiry, Please state so and then offer alternative to quality/Specifications.
- 9.Payment :within one month after delivery & acceptance/satisfactory installation.
- 10.Please ensure that the enquiry number and the due date is superscribed on the envelope failing which your quotation is liable to be rejected.
- 11.Any dispute or differences that may arise between the parties shall be referred to the sole arbitration of the Centre Director or his nominees. The Decision of the arbitrator shall be final and binding on the parties. The venue for arbitration shall be Bangalore. The provisions of the Arbitration and Concillation Act, 1996 as amended from time to time shall apply. The Courts in Bangalore shall have exclusive jurisdiction to deal with any or all disputes between the parties.

Yours faithfully

For and on behalf of Insitute For Stem Cell Science and Regenerative Medicine

Maniarasan B

GKVK, Bellary Road, Bangalore-560065 JNDIA

Phone No. : Email ld: 91-80-23666343/344/345/346

purchase@ncbs.res.in

ERX. 91-80-23636662

Website:

www.ncbs.res.in



2 PART TENDER FOR SUPPLY AND LAYING OF ELECTRICAL CABLES AS PER SPECIFICATIONS.

This tender document contains pages Total 25 pages.

General Terms and Conditions:

The bids are for "Tender for SUPPLY AND LAYING OF ELECTRICAL CABLES AS PER SPECIFICATIONS" Ref. No. INS/W-5006/2023-2024(M)":

Important instructions for the Tenderers: -

The details in regard to technical specification and other terms and conditions should be cogent and clear to the extent possible.

Tenders are invited under 2 part system from reputed Manufacturers / Suppliers for Supply, Installation, Commissioning and Technical Support "SUPPLY AND LAYING OF ELECTRICAL CABLES AS PER SPECIFICATIONS".

- 1.1 Quotations must be submitted giving complete details using enclosed tender papers.
- 1.2 The rates quoted should remain valid for a period of 180 days from the date of Price Bid opening.
- 1.3 Each page of the tender except the Price & Delivery part shall be on printed letterheads or forms and bear the signature, date, name and designation of the person signing the offer. If they are not on letterheads, a rubber stamp indicating full name, address and phone No., Telex No., Fax No. etc. of the firm shall be affixed at the end of each page.
- 1.4 Bids containing erasures or alterations are liable to be rejected unless countersigned by the authorized signatory.
- 1.5 All rates and total amount should be written both in figures and in words and if there is any discrepancy between the two, the lowest amount only will be considered.
- 1.6 We reserve the right to place order for part/reduced quantity than what is specified in the tender and also reserve the right to split the order to more than one supplier.
- 1.7 Please return/upload the tender papers including Conditions of Tender as well as the Annexures with your signature, rubber stamp and date affixed on each page.
- 1.8 All bids in response to this invitation of tender should be submitted in a manner and method specified above. Tender which do not comply with the above conditions are liable to be rejected.
- 1.9 Late and delayed tenders will not be considered. Therefore, tenderers shall ensure that the tenders are uploaded on or before the due date and time stipulated for receipt of bids.
- 1.10 Individuals signing the bid form and other supporting documents must specify the capacity in which they sign, like
 - a) Whether signing as a Sole Proprietor of the firm or his attorney.
 - b) Whether signing as a partner of the firm or his attorney
 - c) Whether signing as Director of a Limited Company.
- 2. CATALOGUE/TECHNICAL LITERATURE
 - All necessary catalogue/drawing literature/data and details of item/s as are considered to be essential for full and correct evaluation of the bid shall invariably accompany the bid.
- 3. Micro and Small Enterprises (MSEs):
- a. Micro and Small Enterprises (MSE) must, along with their offer, provide proof of their being registered as MSE (indicating the terminal validity date of their registration) for the item tendered, with any agency mentioned in the notification of the Ministry of Micro, Small and Medium Enterprises (Ministry of MSME)



b. The MSEs are exempted from payment of earnest money and tender fees subject to furnishing of relevant valid certificate for claiming exemption as per privilege rules of Government of India. c. The bidder submits registration of Udyog Adhar Memorandum (UAM) by Ministry of Micro Small and Medium Enterprises (MSME) vendors on Central Public Procurement Portal (CPPP). The bidders who fail to submit UAM number shall not be able to avail the benefits available to MSEs as contained in Public Procurement Policy for MSEs Order 2012 issued by MSME.

4. PRICE

The Tenders to be quoted in INR. For imported goods, to be quoted in currency of the approved currency from RBI. The price/s quoted shall be firm till the complete execution of the order. All details relating to price, price breakup, inland transportation, documentation, taxes and duties, levies, Road/AIR/Marine freight charges, delivery terms (ex-works/F.O.R/F.O.B/C.I.F.) mode of payment, mode of Despatch, Insurance, Agency Commission, if any, shall be paid after satisfactory installation & Commissioning of the goods. The quoted price should be supported with original proforma invoice. The proforma invoice should indicate the percentage of agency commission included in the FOB prices. Indian Agent to be paid in Indian currency.

For indicating the price, the tenderers may choose any/all of the following:

- a) Ex-works (all other charges to be indicated separately).
- b) F.O.R. site (i.e. Freight, Packing & Forwarding, loading on to the transport, documentation etc. included.) Internal transportation, Freight, Insurance, etc. to be shown separately.
- c) F.O.B (cost of goods, Packing & Forwarding, Inland Transportation, Documentation, etc. till the item is loaded on to the cargo carrier). Freight & Insurance charges to be separately indicated.
- d) C.I.P (cost of goods, packing & forwarding, documentation, freight, insurance, etc. all included). However, freight & insurance charges to be indicated separately. INSURANCE TO BE COVERED TILL NCBS STORES.

5. <u>ELIGIBILITY FOR PARTICIPATION: -</u>

Eligibility Criteria: This invitation for bids is open to Original Manufactures (OEM) /Authorized Dealers/Authorized Distributors/Subsidiary Indian Company of the OEM /Indian Agent on behalf of the Foreign Manufacturer or Principals of the tendered equipment. The bidder must be legal entity having a Permanent Account Number (PAN), Certificate of Incorporation, and Valid GST Registration Certificate is to be submitted

- i. This invitation is for "Class I" and "Class II" Suppliers as prescribed in "Public Procurement (Preference to Make in India) order 2017 of GOI. Dept of DIPP" (OM No. P-4502/2/2017-PP(BE-II) dated 16th September, 2020. Necessary certification for local content must be submitted by the prospective bidders strictly as per Annexure attached with the tender document.
- ii. For indicating the price, the tenderers may choose any/all of the following: The 'Class-I Local Supplier' / 'Class-II Local Supplier' at the time of tender, bidding or solicitation shall be required to indicate percentage of local content and provide self-certification that the item offered meets the local content requirement for 'Class-I Local Supplier' / 'Class-II Local Supplier' as the case may be.

- iii. Indigenous manufacturers and their authorized dealers are eligible and they will be considered as Local Supplier Class I/II for price preference as per GOI Notification vide OM bearing No. F-45021/2/2017-PP(BE-II) dated 04th June, 2020 and again on 16th September 2020 issued by Department of Industry and Internal Trade (Public Procurement Section), Ministry of Commerce & Industry, Govt. of India.
- iv. NON-LOCAL Suppliers are also eligible for participation in the tender as per relaxation on Global Tender Enquiry (GTE) on 371 Medical Devices Equipment as per OM. No.F.4/1/2022-PPD(Pt.) dt.21/06/2022 which will be exempted from the Instructions issued vide OMs No. F/12/17/2019-PPD dt.15.05.2020 & 28.05.2020 regarding GTEs.
- v. In pursuant of the clarification vide GOI Notification vide OM bearing No.P-45021/102/2019-PP(BE-II) (E-29930) dated 26.11.2020 issued by Public Procurement Section, Department of Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, GOI that bidders offering imported products will fall under the category of Non-Local Suppliers and they can't claim themselves as Class I Local Supplier / Class II Local Supplier by claiming profit, warehousing, marketing, logistic, freight etc., as Local Value addition.
- vi. In pursuant of the OM bearing No.F.N.6/18/2019-PPD dated 23.07.2020 issued by Public Procurement Div., Department of Expenditure, Ministry of Finance, Govt. of India the manufacturer/supplier are not eligible for participation if they are from such country which shares the land border with India. Offered items manufactured in such countries will not be considered.
 - As per O.M No. F.No.6/18/2019-PPD, dt.23/07/2020, the following condition to be fulfilled and the bidder to submit the following declaration on their Letter head.
 - I. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is Registered with the Competent Authority.
 - II. "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.
 - III. "Bidder from a country which shares a land border with India" for the purpose of this Order means: -
 - a. An entity incorporated, established or registered in such a country; or
 - b. A Subsidiary of an entity incorporated, established or registered in such a country; or
 - c. An entity substantially controlled through entities incorporated, established or registered in such a country; or
 - d. An entity whose beneficial owner is situated in such a country; or



- e. An Indian (or other) agent of such an entity; or
- f. A natural person who is a citizen of such a country; or
- g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.
- 6. The taxes (State, Central, Turnover tax, Works Contract Tax, etc.). Please specify which are applicable. The duties and other levies, freight, insurance shall be stated clearly and separately. Also please mention whether the same is included in the price/s quoted.

7. VALIDITY OF BIDS

The bids shall be valid for a period of at least 180 days from the date of opening of the Price bids. Bids with shorter validity period are liable for rejection.

8. DELIVERY

The tenderer should clearly mention the time required for supplying the item. The period of delivery will be counted from the date of receipt of the order. The delivery date is the date at which the equipment should be delivered at inStem.

9. PACKING

The item should be packed appropriately so that it can sustain transit hazards, multiple landing, warehousing, etc. during transit.

10. PLACE OF DELIVERY

ALL DELIVERIES shall be effected to the INSTITUTE FOR STEM CELL SCIENCE AND REGENERATIVE MEDICINE, GKVK Campus, Bellary Road, Bangalore-560065.

11. GUARANTEE/WARRANTY

The item/s covered under this tender shall be subject to a guarantee for trouble free performance, workmanship, material etc., fulfilling the specifications mentioned in this tender for 12 months from the date of commissioning. If any defect is found in the material, workmanship or performance during the guarantee period the same may either be repaired/replaced by the supplier as the case may be free of charge. The guarantee period for replacement of parts or repair work shall be same as above. A guarantee certificate to this effect should be forwarded to us with your invoice. For order placed on foreign suppliers, the supplier shall specifically confirm that their Indian representatives, if any, will provide with after sales service and will attend to any repairs or technical problems that may arise.

12. PERFORMANCE B/G

The successful bidder shall have to execute a performance B/G in accordance with the guarantee/warranty for 10% value of the order. This B/G has to be executed on an appropriate value of stamp paper in terms of a bank guarantee drawn on any Nationalized Bank and shall remain valid till the completion of the Defect Liability period/warranty period, with 6 months claim period.

13. TAXES AND DUTIES

The Centre shall deduct all taxes and duties, as applicable, from time to time from the bills payable.



14. PAYMENT TERMS

90% against delivery; balance 10% payable after installation subject to receipt of PBG for 10% order value, trail run and subject to acceptance by the group head through SAI and all other relevant documents, with Performance Bank Guarantee. The percentage of PBG will be determined based on the prevailing rules as of date of finalization of the tender. All claims shall cease as per the Limitation Act.

15. CLARIFICATIONS

After opening the bids, if it becomes necessary for the purchaser to seek clarifications from the bidders, the same will be sought from the bidders. In such an event, the bidders will furnish all technical information / clarifications to the purchaser to reach on or before the due date fixed for that purpose, indicating the Purchaser's tender reference. If the technical clarifications sought do not reach on or before the date fixed, the bids shall be summarily rejected without any further notice.

16. RISK CLAUSE

Notwithstanding the other terms therein, the Centre at its option will be entitled to terminate the contract and to avail from elsewhere; at the risk and cost of contractor; either the whole of the contract or any part which the contractor has failed to perform within the time stipulated or if the same performance is not available, the best and the nearest available substitute thereof. The contractor shall be liable for any loss which the Centre may sustain by reason of such risk contract in addition to penalty.

17. DISPUTE AND RESOLUTION

Any dispute or differences that may arise between the parties that cannot be settled by mutual discussion at appropriate levels shall be referred to the sole arbitration of the Director, inStem or his nominee and his decision in the matter shall be final and binding upon the parties to the dispute. The venue for arbitration proceedings shall be Bangalore. In respect of any matters pertaining to such arbitration, the courts of law in Bangalore will have exclusive jurisdiction. This arbitration agreement (hereinafter referred to as this "Agreement") relating to this Contract (hereinafter called the "Main Agreement" for this agreement) is made under the provisions of the Arbitration and Conciliation Act, 1996 as amended from time to time and the rules thereunder (hereinafter called the Arbitration Act).

- 18. The Price shall be FOR INSTEM Stores.
- 19. INSTEM reserves the right to split the quantities or reject one or more offers in full or part without any reasons. Therefore, INSTEM decision is final and binding.
- 20. The quantity mentioned in the tender may be decreased/increased while ordering. However, the price quoted should be firm irrespective of change in the quantity.
- 21. ACCEPTANCE OF TENDERS
 - INSTEM does not pledge itself to accept the lowest/ any tenders and reserves to itself the right to accept the whole or part of the tenders or a part of the quantity offered.
- 22. Your Service Engineer should be fully trained to install the equipment and capable of maintaining the equipment during / after the warranty period.



23. LIQUIDATED DAMAGES

The successful bidder will have to agree that in case the item is not supplied within the agreed delivery schedule and after a grace period of seven days, then Liquidated Damages (not in terms of penalty) will be imposed automatically and be deducted from their bill at the rate of 0.5% per week subject to a maximum of 10% of the order value.

- 24. Please enter unit price, Total Price and Grand Total in figures as well as words. Unit price and Total Price may be entered below each item.
- 25. Since we are a public funded research institution, we are exempted from paying Customs Duty (Except advolerum duty of 5% + 2% cess and 1% Cess Sec & High Edu. CESS vide Notification No.51/96 Customs dt: 23.07.1996, Notfn No. 28/2003- custom dt: 01.03.2003, Notfn., as amended from time to time for research purposes only. This Registration is subject to terms and conditions mentioned overleaf. This registration is valid up to 31.08.2025).

26. FORCE MAJEURE CLAUSE:

a) Force Majeure means an event beyond the control of the supplier and not involving the supplier's fault or negligence and which is not foreseeable. Such events may include, but are not restricted to the acts of the purchaser either in its sovereign or contractual capacity, wars or revolution, hostility, acts of the public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes, lock-outs, and freight embargoes. However, it should not be used by a party to effectively to escape liability for bad performance.

If there is delay in performance or other failures by the supplier to perform its obligation under its contract due to event of a Force Majeure, the supplier shall not be held responsible for such delays/failures.

If a force majeure situation arises, the supplier shall promptly notify the purchaser in writing of such conditions and the cause thereof within 21 days of occurrence of such event with reasonable evidence thereof. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as reasonably practical, and shall seek all reasonable alternative means of performance not prevented by the force majeure event.

If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of force majeure for a period exceeding 90 days, either party may at it option terminate the contract without any financial repercussion on either side.

- b) There may be a Force Majeure situation affecting the institute only, under which the institute shall have equal rights to claim relief under such Force Majeure situations.
- 27. Debarment of bidders by the institute for committing of offences or breach of contract will be governed by the provisions of Government of India, Ministry of Finance, Department of Expenditure, Procurement Policy Division OM No. F/1/20/2018-PPD dated 02.11.2021 / relevant GFR provisions and based on approval of Nodal Ministry.

For and on behalf of

Institute for Stem Cell Science and Regenerative Medicine

Purchase Officer

GKVK, Bellary Road, Bangalore 560 065. India Phone +91-80-23666341 /344/345/346. Telefax +91-80-23636662 purchase@INSTEM.res.in . www.INSTEM.res.in



ANNEXURE A – SPECIFICATIONS

Technical Specifications for "SUPPLY AND LAYING OF ELECTRICAL CABLES AS PER SPECIFICATIONS"

SI.No	Details of work	Quantity
1	Laying of 4 runs x 3.5 x 185 Sqmm LT XLPE cable 1.1 kV grade FRLS cables armoured aluminum conductor cables in ground, in all kind of soil, 750mm below ground level including transportation of cable to site	20.00
2	excavation, refilling with sand and baked bricks On top and sides and providing cable route/joint markers complete Laying of 4 runs x 3.5 x 185 Sqmm LT XLPE cable in the existing trench 1.1 kV grade armoured aluminum conductor cable in existing trench including transportation of cable to site, removing of trench covers and	90.00
3	reclosing the covers after laying the cables in good condition with supply of all necessary materials such as brackets, clamps, MS/GI spacers complete as required and as directed by EIC. Providing end terminations for 3.5 x 185Sqmm, 1.1kV grade XLPE insulated armoured, Aluminum conductor cables including supply of double compression Cable gland, lugs, neoprene bushes and other	12.00
4	materials and tools required complete with terminal connections, earthing of glands and as required and as directed by EIC. Supply of 3.5C x 150 Sqmm LT XPLE insulated cable, multi-stranded, Circular shaped, PVC inner & outer sheath, voltage grade 1100V, round wire armoured cable confirming to IS: 7098 with latest amendments. The	70.00
5	cable shall bear ISI certification mark. Supply of 3.5C x 185 Sqmm LT XPLE insulated cable, multi-stranded, Circular shaped, PVC inner & outer sheath, voltage grade 1100V, round wire armoured cable confirming to IS: 7098 with latest amendments. The	600.00

cable shall bear ISI certification mark.



GENERAL CONDITIONS OF CONTRACT AND SPECIAL CONDITIONS

Certified that I / We have gone through the General Conditions of Contract & Special conditions for the works kept in the Electrical Section-inStem. I/We agree to abide by the same and aware that these are part of the tender document.

TECHNICAL SPECIFICATIONS

The work will be executed as per Technical Specifications (in addition to specifications attached with tender) kept in the Electrical Section-inStem.

We understood that the items described in SOQ are to be read in conjunction with the specifications and quoted our rates accordingly.

Signature of the Tenderer



TECHNICAL SPECIFICATIONS



SPECIFICATION FOR LAYING OF CABLES

1.0 Scope:

This specification is intended to cover the requirements of installation and energising of PVC/XLPE/PILCDSTA power cables including jointing of cables.

2.0 Standards:

The power cable and its fixing accessories shall comply with the latest relevant Indian Standards and National Electrical Code.

3.0 Laying of Cables:

3.1 General:

- 3.1.1 Before the commencement of cable laying, it shall be ensured by the Engineer-in-Charge that only ISI marked cables are used. It shall be the responsibility of the contractor to check the soundness and correctness of the size of the cable while taking delivery of the cable from stores. Any defect noticed shall be brought to the notice of the issuing authorities immediately. If any defect is noticed after the cable is laid or during the process of laying, it shall be brought to the notice of the Engineer-in-Charge and upon his satisfaction, that the cable is not damaged due to bad handling, it will be the entire responsibility of the contractor to retrieve the cable already laid and return the defective cable to store and take fresh length of the cable from the store and relay the same.
- 3.1.2 The material such as bricks, sand, cable route markers, RCC slab of best quality as approved by the Engineer-in-Charge only shall be used for cable laying works.
- 3.1.3 The contractor shall provide all the necessary labour, tools, plants and other requisites at his own cost for carrying out pumping of water and removing of water from trenches, if any, where required.
- 3.1.4 Installation shall be carried out in a neat, workman like manner by skilled, experienced and competent workman in accordance with standard practices.
- 3.1.5 While laying the cable care shall be taken to avoid formation of kinks and also damage to the cable. In the case of cable bends, it shall not have bent radius lesser than 20 times the overall diameter of the cable.
- 3.1.6 A cable loop of about five meters length and as directed by the Engineer-in-Charge shall be provided at the following locations.
 - a) Near the termination points
 - b) Near to the straight through joint
- 3.1.7 The method of cable laying and routing of cables, shall in every case be as directed by the Engineer-in-Charge.
- 3.1.8 Whenever cable passes through hume pipes/GI pipes embedde across the wall in a building, both the ends of the pipe shall be suitably sealed.
- 3.1.9 Identification tags indicating the size of the cable and feeder designation shall be securely attached at both ends of the cable. Such tags shall also be attached to the cable at



intervals of 250 Mtrs. The materials of the tag shall be of either 12 SWG GI sheet or plastic. In case of plastic, the details have to be engraved and incase of GI sheet, the details should be punched. Cable route markers shall be provided at the intervals of 200 M with a minimum of one number route marker. The details of the route markers shall be as per the drawing CED/ELE/S/10. At the locations of straight through joints, necessary joint-markers shall be provided.

3.1.10 When cable runs vertically, it shall be clamped on mild steel flats or angle iron fixed on walls and are spaced at such intervals as to prevent buckling of the cables. All steel work shall be painted with a coat of red oxide and thereafter finished with suitable anti-corrosive paints.

3.2 Cables laid in ground:

- 3.2.1 The cables shall be laid at a minimum depth of 0.75 M when laid in ground. When cable pass through roads, nallahs etc. they must be protected by either hume pipe or GI pipe of suitable dimensions.
- 3.2.2 Excavations of trenches shall be carried out as indicated in the drawing CED/ELE/S/8 & 9. The width of the trench at the bottom shall be 0.4 M for one cable. In case the total number of cables laid in trenches is more than one, then the width shall be such that the spacing between the cables is maintained as shown in the drawing CED/ELE/S/8 & 9. Before the cable is laid in the trench the bottom of the trench shall be cleared from stones and other sharp materials and filled with sand layers of 75 mm, as shown in the drawing.
- 3.2.3 While removing the cable from the drum, it shall be ensured that the cable drum is supported on suitable jacks and the drum is rotated to unwind the cable from the drum. The cable should never be pulled while unwinding from the drum. It shall be ensured that the cables are run over the wooden rollers placed in the trench at intervals not exceeding 2 M.
- 3.2.4 After placing the cables in the trench, the sides and top of the cable shall be covered with bricks/RCC slabs as indicated in the drawing.

After placing brick/RCC slab, the trench shall be filled in layers ensuring that each layer is well rammed by spraying water and consolidated. The extra earth shall be removed from the place of trench and deposited at a place as directed by the Engineer-in-Charge.

3.3 Cables laid in built up trench:

3.3.1 Before the commencement of cable laying the cable trench shall be cleaned properly. Cable shall be laid as explained in item 3.2. Cable shall be properly clamped to the cable supports which are provided in the cable trench. The method of clamping shall suit the size of the cable and the cable supports, as directed by the Engineer-in-Charge.

Care shall be taken while removing and replacing the trench cover slab. It is the responsibility of the contractor to make good any damaged trench covers.

3.4 Cable terminations and straight through joints:

- 3.4.1 All cable jointing materials such as straight through joint boxes, cable compound, cable lugs, insulation tapes etc. shall be of best quality and as approved by the Engineer-in-Charge.
- 3.4.2 Cable glands for strip armoured cables shall include a suitable armour clamp for receiving



and securely attaching the armouring of the cable in a manner such that no movement of the and securery when the assembly is subjected to tension forces.

armoul dension forces.

The cable gland shall not impose on the armouring, a bending radius not less than the diameter arable. The clamping ring shall be solid and of adaptive. The cable. The clamping ring shall be solid and of adequate strength.

of the shall be made for attachment of an external earthing bond between the metallic provision of the cable and the metallic structure of the apparatus to which the cable box is attached.

3.5 Sealing boxes:

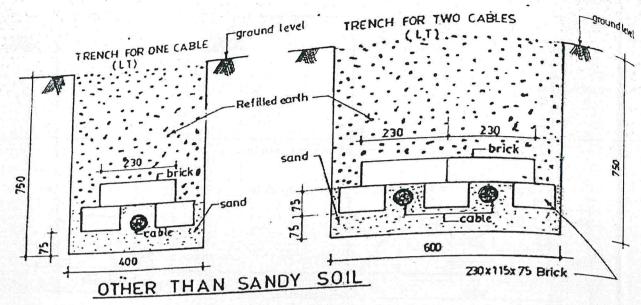
- A sealing box, irrespective of the class of insulation of the cable for which it is intended, 3.5.1 A seems a state of the sold state of the s flame proof/hazardous areas.
- 35.2 All parts and connection for attaching the armouring, wiping or clamping the metallic sheath in a sealing box, shall be easily accessible. This may be achieved by splitting the box or by providing a suitable cover or other such means.
- 353 The joints in the box shall prevent leakage of the compound.
- 35.4 Provision shall be made to ensure that the cores of the cable are efficiently sealed to prevent moisture penetrating along the strands or the cable conductors.
- 35.5 The sealing box shall be provided with compound filling orifices with suitable covers or plugs of size that will permit easy pouring of the compound.
- In all cases where screwed plugs are used, one or more air vents shall be provided to ensure complete expulsion of air and total filling of the box with compound.
- 3.5.6 The box shall be of sufficient length to allow for manipulation of the insulated cover without damage to them or to the insulation.
- 3.5.7 A sealing box intended to be attached directly to the apparatus shall be designed such that the box together with the connected cable may be detached from the apparatus without disturbing the sealing compound.
- 35.8 Cable sealing and dividing boxes intended for use in the flame proof areas shall comply additionally with the relevant requirements of IS:2148-1968.

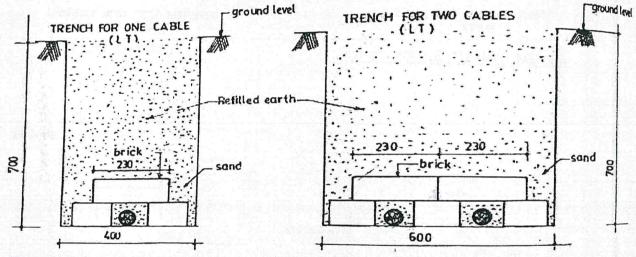
Once cable is laid, following test shall be conducted in the presence of Engineer-in-charge, before energising the cable:

- i) Insulation resistance test (Sectional and Overall).
- ii) Sheathing continuity test.
- (iii) Continuity and conductor resistance test.
- iv) Earth test.
- v) High voltage test.

Tests conducted shall be as per Indian Standards and National Electrical Code.





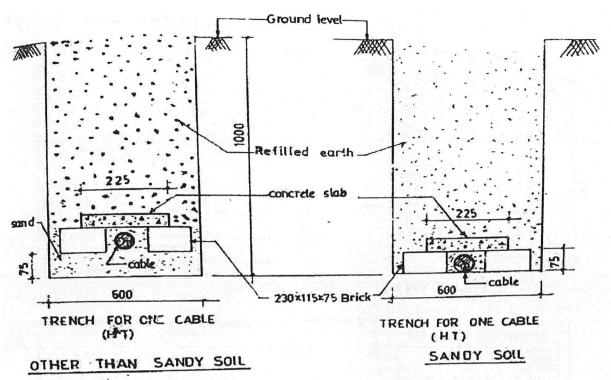


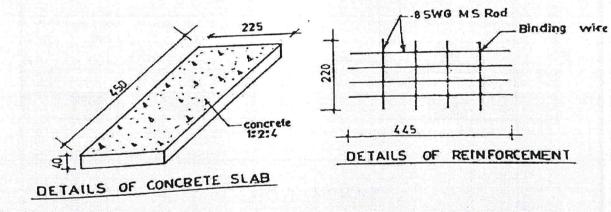
SANDY SOIL

All dimensions in mm

DETAILS OF LT CABLE LAYING ARRANGEMENTS



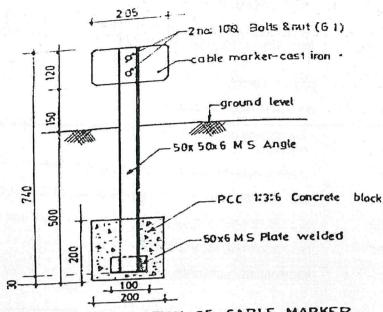




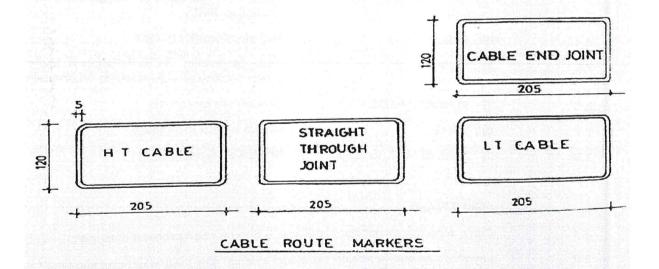
NOTE All dimensions in mm

DETAILS OF HT CABLE LAYING ARRANGEMENT





TYPICAL ARRANGEMENT OF INSTALLATION OF CABLE MARKER



NOTES All dimensions in mm.

DETAILS OF CABLE ROUTE MARKERS

GKVK, Bellary Road, Bangalore 560 065. India Phone +91-80-23666341 /344/345/346. Telefax +91-80-23636662 purchase@INSTEM.res.in . www.INSTEM.res.in



SPECIFICATIONS

	The residence of the contract	
8.	TEST WITNESS	SINEER. The Contractor shall give at
8.1	TEST WITNESS Tests shall be performed in the presence of the ENG least fifteen (15) days advance notice of the date whe	n the tests are proposed to be carried
	out.	
IV.	CABLE WORK	
1.	DESCRIPTION OF WORK	is the appendule of superfit
	Supply and laying of cables and cable trays as per sp drawings.	
2.	APPLICABLE CODES, STANDARDS & PUBLICATION	ONS
2.1	IS: 1554 (Part-I) : 1.1 KV Grade PVC insulate	ed cables.
2.2	IS: 10242 (Part-3, Section-12) : Installation of c	ables for low voltage system.
2.3	IS : 7098 (Part-1&2)/IS:5831/	
		polyethylene insulated PVC sheathed
	Part-I :For wo Volts.	rking voltages up to & including 1100
	Part-II: Fo including 33K	or working voltage from 3.3 KV up to & CV.
2.4	IS: 10810 : Method of test	for cables
2.5		tice for installation & maintenance of up to & including 33 KV rating.
2.6	IS: 8130/IEC: 60228 : Conductors fo	r cables
2.7	IS: 10418 : Drums for elec	ctric cables.
2.8	IS: 2062, IS: 800, IS: 816 : Structural wed	ding steel
3.	SUBMITTALS	
3.1	Cable schedule as per site conditions & good for co	onstruction drawings.
3.2	Layout of various cables on cable tray / trench alor distance between cables etc, size of cable trays etc	ag with a set of aghles
3.3	Cable tray layout, as per site condition, duly coordi	nated with other services
3.4	Test Reports	
	Routine test certificates for each drum of cable bro	ught to elte
	sign .	agnitio site.
		+8 ex



4.1

4.2

4.3

4.4

Ref: INS/W-5006/2023-2024(M)

GENERAL

Cable shall be supplied inspected, laid, tested and commissioned in accordance with drawings, specifications, relevant Indian Standards Specifications and cable manufacturer's instructions.

The cable shall be delivered at site in original drums with manufacturer's name clearly written on the drum.

MATERIAL

The MV power cable of 1100 V. grade shall be XLPE insulated Aluminium conductor armoured stranded cable. The cables shall be provided with inner sheath of extruded black PVC compound type ST-1. The outer sheath shall be resistant to flanges, rodent & termite attack & shall have fire resistant to retardant properties.

The MV control cables shall be XLPE insulated copper conductor armoured stranded cable with extruded PVC inner and outer sheath similar to power cables as given in clause above.

CABLE TRAYS

- a. Prefabricated Cable trays of ladder type and associated accessories, tees, bends, elbows & reducers shall be fabricated from 12 gauge (2.6 mm thick) mild steel. Perforated cable trays and associated accessories tees, elbows, and reducers shall be fabricated from 14 gauge (2 mm thick) MS steel.
- Cable trays and accessories and covers shall be painted with one shop coat of red oxide zinc chromate primer and two coats of Aluminium alkyd paint.

STORAGE AND HANDLING

- a. Cable drums shall be stored on a well drained, hard surface, preferably of concrete, so that the drums do not sink in the ground causing rot and damage to the cable drums.
- During storage periodical rolling of drums once in 3 months through 90° shall be done. Rolling shall be done in the direction of the arrow marked on the drum.
- c. It should be ensured that both ends of the cable are properly sealed to prevent ingress/absorption of moisture by the insulation.
- d. Protection from rain and sun shall be ensured. Sufficient ventilation between cable drums, should be ensured during storage.
- e. The drums shall always be rested on the flanges and not on the flat sides.
- f. Damaged battens of drums etc. should be replaced, if necessary.
- 9. When cable drums have to be moved over short distances, they should be rolled in the direction of the arrow, marked on the drum.
- h. For transportation over long distances, the drum should be mounted on cable drum wheels strong enough to carry the weight of the drum and pulled by means of ropes. Alternatively, they may be mounted on a trailer or on a suitable mechanical transport.
- i. When unloading cable drums from vehicles, a crane shall preferably be used.

 Otherwise the drum shall be rolled down carefully on a suitable ramp or rails, where
- While transferring cable from one drum to another, the barrel of the new drum shall have a diameter not less than that of the original drum.



- k. The cables shall not be bent sharp to a small radius. The minimum safe bending radius for all types of XLPE cables shall be taken as 12 times the overall diameter of the cable. Wherever practicable, larger radius should be adopted. At joints and terminations, the bending radius of individual cores of a multi core cable shall not be less than 15 times its overall diameter.
- Cable with kinks and straightened kinks or with similar apparent defects like defective armouring etc. shall be rejected.
- Cables from the stores shall be supplied by the contractor as per the site requirement in pieces cut in the stores.

7. INSTALLATION

7.1 GENERAL

The cable installation including necessary joints shall be carried out in accordance with the specifications given herein. For details not covered in these specifications, I.S. 1255 shall be followed.

No straight through joint shall be permitted in the system. The cables shall be supplied as per cable schedule submitted by the contractor & approved by Engineer.

7.2 ROUTE

- i. Before the cable laying work is undertaken, the route of the cable shall be decided by the Engineer.
- ii. While shortest practicable route shall be preferred, cable runs shall generally follow fixed developments such as roads, foot-paths etc. with proper offsets so that future maintenance, identification etc. are rendered easy. Cross country run to shorten the route length is not desirable as it would be set with route identification and maintenance problems, besides posing difficulties during later development of open areas etc.
- iii. While selecting cable routes, corrosive soils, ground surrounding sewage and effluent etc. shall be avoided. Where this is not feasible, special precautions as approved by the Engineer shall be taken.
- iv. As far as possible, the alignment of the cable route shall be decided taking into consideration the present and future requirements of other agencies and utility services affected by it, the existence of any cable in the vicinity as may be indicated by cable markers or cable schedules or drawing maintained for that area, possibilities of widening of roads/lanes, storm water drains etc. Cable routes shall be planned away from the drains and should be within the property.
- v. Whenever cables are laid along well demarcated or established roads, the MV cables shall be laid further from the kerb line than HV cables.
- vi. Cables of different voltages and also power and control cables shall be kept in different trenches with adequate separation. Where available space is restricted, MV cables shall be laid above HV cables.

Where cables cross one another the cable of higher voltage shall be laid at a lower level than the cable of lower voltage.

7.3 WAY LEAVE

7.4

It may be necessary to obtain way leave for the cable route from the appropriate

- a) Drainage, Public Health and Water Works.
- b) Telephones and Telegraphs.
- c) Gas works.



1.5

1.6

7.7

7.8

'.15

Ref: INS/W-5006/2023-2024(M)

- d) Other Undertakings.
- e) Owners of properties.

Where necessary, joint inspection with representatives of other authorities may be arranged so that mutual interests are safeguarded. In case of private property, Section 12/51 of the Indian Electricity Act shall be complied with.

PROXIMITY TO COMMUNICATION CABLES

Power and communication cables shall as far possible cross at right angles. Where power cables are laid in proximity communication cables the horizontal and vertical clearances shall not normally be less than 60 cms.

LAYING METHODS

- Cables shall be laid direct in ground in pipes/closed ducts, in open ducts or on surface depending on site conditions.
- During the preliminary stages of laying the cable, consideration should be given to proper location of the joint position so that when the cable is actually laid the joints are made in the most suitable places. As far as possible water logged locations, carriage ways, payments, proximity to telephone cable, gas or water mains, inaccessible places, ducts, pipes, racks etc. shall be avoided for joint position.

7.10 LAYING DIRECT IN GROUND

Follow DOS specification for cable laying

7.11 GENERAL

This method shall be adopted where the cable route is through open country along roads/lanes etc. and where no frequent excavations are encountered and where excavation is easily possible without affecting other services.

2.12 EXCAVATION OF TRENCHES

Follow DOS specification for cable laying

13 LAYING OF CABLE IN TRENCH

Follow DOS specification for cable laying

14 Back Filling

Follow DOS specification for cable laying

Route Markers

- a) Route markers shall be provided along straight runs of the cables at locations approved by the Engineer and generally at intervals not exceeding 100 m. Markers shall also be provided to identify change in the direction of the cable route and also for location of every underground joint.
- b) Route markers shall be made out of 100 mm x 100 mm x 5 mm Gl/Aluminium plate, welded or bolted on to 35 mm x 35 mm x 6 mm angle iron 60 cm. long. Such plate markers shall be mounted parallel to and 0.5 m or so away from the edge of the

Alternatively cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) marker 60 cm x 60 cm 10 cm in size shall be laid flat and centered over the cable. The concrete markers unless otherwise instructed by the Engineer shall project over the surrounding surface so as to make the cable route easily identifiable.



	c) The work 'cable' and other details such as voltage grading, size etc. as furnished by the Engineer shall be inscribed on the marker.		
7.16	Laying in Pipes/Closed ducts :		
	Follow DOS specification for cable laying		
7.17	In location such as road crossing, entry to building, on poles, in paved areas etc. cables shall be laid in pipes of closed ducts.		
7.18	Where steel pipes are employed for protection of single core cables feeding AC load, the pipe should be large enough to contain both cables in the case of single phase system and all cables in the case of polyphase system.		
7.19	The pipes on road crossing shall preferably be on the skew to reduce the angle of bendas the cable enters and leaves the crossings. This is particularly important for high voltage cables.		
7.20	Manholes of adequate size as decided by the Engineer shall be provided to facilitate feeding/drawing in of cables and to provide working space for persons. They shall be covered by suitable manhole covers with frame of proper design. The construction of manholes and providing the cover is not in the scope of this Contract and shall be got executed and paid for by the Engineer through another agency.		
7.21	Pipes shall be continuous and clear of debris or concrete before cable is drawn. Sharp edges at ends shall be smoothened to prevent injury to cable insulation or sheathing.		
7.22	Pipes for cable entries to the building shall slope downwards from the building and suitably sealed to prevent entry of water inside the building. Further the mouth of the pipes at the building end shall be suitably sealed to avoid entry of water. This seal in addition to being waterproof shall also be fireproof.		
7.23	All chases and passages necessary for laying of service cable connections to buildings shall be cut as required and made good to the original finish and to the satisfaction of the Engineer.		
7.24	Cable grips/draw wires and winches etc. may be employed for drawing cables through pipes/closed ducts etc.		
7.25	Laying on Cable Trays		
7.26	Cables, where indicated in approved shop drawings, shall be laid on overhead cable trays which are suspended from ceiling or supported from wall, by anchor fasteners as required.		
7.27	The Contractor shall provided for all accessories for the installation of the cable trays such as bends, tees, reducers coupler plates, trifoil clamps and structural steel members (comprising of channels, angles, flats, rods) to be fabricated at site for structural supports for cable trays racks etc.		
7.28	CABLE TRAY MOUNTING		
	Unless otherwise specifically noted on the relevant layout drawing, all cable tray mounting works to be carried out ensuring the following:		
	a) Cable tray mounting arrangement type to be as marked on layout drawing.		
	b) Assembly of tray mounting structure shall be supplied, fabricated, erected & painted by the contractor.		
	c) Tray Mounting structures shall be welded to plate inserts, or to structural beams, as		
	d) All structural steel to be painted with one shop coat of red oxide and oil primer followed by a finishing coat of Aluminium alkyd paint. When any cuts or holes are		



1.30

81

3.3

Ref: INS/W-5006/2023-2024(M)

made on finished steel work these shall be sealed against oxidation by red oxide followed by the same finishing paint.

e) Cable tray running along the wall should be supported at intervals not exceeding 1.5 m. In case of branching, there should be a support on all branches at a distance of 30 cms from the point of branching. Support should not be less than 40 mm x 40 mm x 5 mm MS angle-secured in an approved manner where runs are along the walls. In case of ceiling suspended cable tray horizontal supports made of 40 mm x 40 mm 5 mm MS angle iron shall be provided. The horizontal interval between two such supports shall be 1.0 meter. These supports shall be suspended from C.I. boxes or suitable approved suspension devices such as dash fastener of suitable sizes in the ceiling by means of 10 mm diameter MS rods. All above mounting accessories form part of installation of cable trays.

Termination

129

Brass double compression glands shall be provided for MV cables. Termination work shall be carried out only by a licensed/experienced cable jointer.

TESTING & COMMISSIONING

INSPECTION

All cables shall be inspected upon receipt at site and checked by the Engineer for any damage during transit.

3.2 Testing

- i. All 1100 Volt grade cables before laying shall be tested with a 500 V megger or with a 2,500/5,000 V megger for cables of higher voltages. The cable cores shall be tested for continuity, absence of cross phasing, insulation resistance to earth/sheath/armour and insulation resistance between conductors.
- All cables shall be subject to above mentioned tests during laying, before covering the cables by protective covers and back filling and also before the jointing operations.
- After laying and jointing, the cable shall be subjected to a 15 minutes AC/DC pressure test.
- iv. In the absence of facilities for pressure testing in accordance with clause 1.5.3, it is sufficient to test for one minute with 1,000 V meager for cables of 1.1 KV grade and with 2,500/5,000 V meager for cables of higher voltages.

Completion plan and completion certificate

- a) After completion of the work the Contractor shall draw completion plans to a suitable scale and shall submit to the Engineer as given in the clause _____ of these Tender Documents. The completion plans shall, inter-alia, give the following details:
 - i Layout of cable work
 - ii Length, size, type and grade of cables.
 - iii Method of laying i.e. direct in ground, in pipes etc.
 - iv Location of each joint with jointing method followed.
 - v Route marker and joint maker with respect to permanent land marks available at site.
 - vi Wherever the previously laid cable is cut and additional joints are introduced etc., the cable records shall suitably be amended.

List of Preferred/Equivalent Makes 1. Cables - Finolex / Polycab / Havells / Universal

2. Cable Glands and lugs - Dowells / Pecco / Comet / Siemens



<u>Declaration of Compliance of Order (Public Procurement No.1, 2 & 3) dtd 23-Jul-2020 & 24 Jul 2020 on Restrictions under Rule 144 (xi) of the General Financial Rules (GFRs), 2017</u>

This declaration must form part of all tenders & it contains general information and serves as a declaration form for all bidders. (Before completing this declaration, bidders must study the General conditions. Definitions, Govt Directives applicable in respect of Public Procurement No.1, 2 & 3) dtd 23 Jul 2020 & 24 Jul 2020 on Restrictions under Rule 144 (xi) of the General Financial Rules (GFRs), 2017 & prescribed tender conditions).

DECLARATION BY AUTHORISED SIGNATORY OF THE FIRM			
I, the undersigned,			
my capacity as o M/s			
M/s (name of bidder entity), that:			
 The facts contained herein are within my own personal knowledge. I have read the Order (Public Procurement No.1, 2 & 3) dtd 23 Jul 2020 & 24 Jul 2020 on the subject of Restrictions under Rule 144 (xi) of the General Financial Rules (GFRs), 2017 regarding restrictions on procurement from a bidder of a country which shares a land border with India and comply to all the provisions of 			
3) I certify that M/s			
4) I understand that the submission of incorrect data and / or if certificate / declaration given by M/s			
AUTHORISED SIGNATURE: DATE:			
Seal / Stamp of Bidder			



Bid Security Declaration for Order Value > Rs.5 Lakh (to be submitted on Company's Letter Head)

I/We the undersigned hereby declare that if we withdraw or modify the bids during the period of its validity, or if we are awarded the contract and fail to sign the contract, or to submit a performance security before the deadline defined in the request for bids document or fail to execute the contract, we will be suspended for the period of time specified in the request for bids document from being eligible to submit bids for contracts with the entity that invited the bids.

Name and Signature of Authorized Signatory and Company Seal



Certificate for Local Content

"We (name of manufacturer) hereby confirm in respect of quoted item(s) that Local Content is equal to or more than 50% and come under "Class-I Local Supplier" Category. As being "Class – I Local Supplier", we are eligible for Purchase Preference under "Make in India" Policy vide GOI Order No.P-45021/2/2017-PP (B.E.-II) dated 15.06.2017 (subsequently revised vide orders dated 28.05.2018, 29.05.2019 and 04.06.2020).

OR

"We (name of manufacturer) hereby confirm in respect of quoted item(s) that Local Content is more than 20% but less than 50% and come under "Class-II Local Supplier" Category.

The details of the location (s) at which the local value addition made is/are as under:

1.

2.

3.

*Strike out whichever is not applicable

Date:

Seal & Signature of the Bidder

NOTE:

- 1. Self-certification that the item offered meets the minimum local content (as above) giving details of the location(s) at which the local value addition is made in case the bidder wishes to avail the benefits under the make in India policy, if applicable.
- 2. In cases of procurement for a value in excess of Rs.10 crores, the local supplier shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content to avail the benefits under the make in India Policy, if applicable.



DECLARATION BY AUTHORISED SIGNATORY OF THE FIRM

I, the undersig	gned,	(full names),
of M/s	clare, in my capacity as	(name of bidder entity), that:
1) The facts of	ontained herein are within my own pers	onal knowledge.
Procurement l	the Order and provisions of Government Policy Division OM No. F/1/20/2018-Plan offence and not engaged in any of the	nt of India, Ministry of Finance, Department of Expenditure PD dated 02.11.2021 and confirm that I/we have not been e acts as mentioned below:
A bidder shall	l be debarred if he has convicted of an o	ffence-
(a) unde	er the Prevention of Corruption Act, 198	8:
	or	
	Penal Code or any other law for the tim at to public health as part of execution of	ne being in force, for causing any loss of life or property or of a Public Procurement Contract
AUTHORISE	ED SIGNATURE:	DATE:
Seal / Stamp o	of Bidder	