



**ALL INDIA INSTITUTE OF MEDICAL SCIENCES,
BHUBANESWAR, ODISHA**

**NOTICE INVITING QUOTATION
FOR**

**SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTRICAL
WORKS AT PUBLIC TOILET IN HOSPITAL COMPLEX, AIIMS, BHUBANESWAR.**



All India Institute of Medical Sciences
Ministry of Health & Family Welfare, Government of India
Bhubaneswar (Odisha) - 751 019

AIIMS/BBSR/ ENGG./05/2017 -18

Date: 16/05/2017

NOTICE INVITING QUOTATION (NIQ)

NAME OF THE WORK: Supply, Installation, Testing and Commissioning of Electrical works at public toilet in Hospital Complex of AIIMS, Bhubaneswar.

Sealed quotations are invited from the interested electrical contractors having valid licences (MV or above) who had never been black listed / debarred by any of the Govt. Department / Govt. Organization / Central PSUs / State PSU and who will submit an undertaking at “Annexure-A” attached at Page No. 10 and should have completed similar nature of electrical work/ cabling work in Govt. Department / Public Sector Undertaking / Govt. Construction Agency during last three years. A list of completed work be enclosed with filled quotations supported with performance/ completion certificate. Contractor should have valid electrical license and self attested copy of the same must be submitted with the quotations.

Estimated cost of work is Rs. 1, 09,895.00.

Document to be submitted with NIQ as eligibility criteria:

- (1) **Original EMD (Earnest Money Deposit) of value Rs. 2,198.00 (Two Thousand One Hundred Ninety Eight Only) (2% of Estimated Value) shall payable to AIIMS, Bhubaneswar through Demand Draft (D/D)/ Bankers Cheque (BC) along with the NIQ which will be Refunded Back as per General conditions of Contract of CPWD works 2014.**
- (2) **Cost of the quotation Papers is Rs 500.00 (Five Hundred Only) in favour of AIIMS, Bhubaneswar in the form of Demand Draft in any nationalised bank and is non refundable.**
- (3) **The Copy of self attested PAN CARD, Service Tax Registration, valid Electrical license (MV & above) and completion certificate of similar work attended shall be submitted along with the quotation.**
- (4) **The Contractor must sign all pages of NIQ with full signature and Put Seal if Any.**
- (5) **The undertaking form must be filled up and signed with seal.**
- (6) **The quotation papers can be downloaded from the website www.aiimsbhubaneswar.edu.in.**
- (7) **The quotationers must quote the rate in Bill of Quantities (BOQ) enclosed at page no 09.**

The quotation duly filled up with Bill of Quantities along with all necessary documents, in a sealed envelope superscribing the name of work shall be submitted to the office of the Executive Engineer (Electrical), III floor, Academic building, AIIMS, Bhubaneswar, At- Sijua, Post- Patrapada, Pin-751019 upto 3.00 PM on 22/05/2017 and the same will be opened at 3.30 PM on the same day at Board Room situated in the 1st Floor, Academic Building, AIIMS, Bhubaneswar in presence of quotationers/contractors who may wish to be present at the time of opening.

TERMS & CONDITIONS

1. Works should be executed as per CPWD specifications.
2. Water & Electricity will be arranged by the contractor at his own cost.
3. All T&P required for the work shall be arranged by the contractor at his own cost.
4. The rates are inclusive of all lead & lifts etc.
5. All taxes income Tax, Work contract Tax (except service tax) as applicable will be deducted as per Govt. Rule from the contractor bill.
6. **5% Security Deposit** will be deducted from the gross bill amount & will be released after the defect liability period of six months which will be reckoned from the date of successful completion of the work. In case any defect is found in the said work within the defect liability period, the same shall be rectified by the contractor immediately at his own cost.
7. **PBG (Performance Bank Guarantee:** The contractor will have to deposit **5% of lowest quoted total value (In case of lowest quotationer) in the form of BG** made in any nationalised bank and to be deposited before receiving Work order . The same will be refunded back as per CPWD rule.
8. Contractor will be fully responsible to labour payments, accident, mis-happening, damages & other labour welfare & safety measures. AIIMS, Bhubaneswar will not be responsible in any case.
9. **Time allowed for completion of work is 15 days from the date of issue of Work Order.**
10. The above shown quantities are tentative & may vary as per site condition. This will be decided by engineer in charge but the variation if goes beyond estimated quantity then that will be paid as per the quoted price.
11. **Payment will be done as per actual measurement at site after completion of work and verification of bill.**
11. The quoted rates must be included of all Taxes. Service Tax will not be payable.
12. In the event of any of the documents found fabricated/forged/tampered/alterd/manipulated in the NIQ, then he would be debarred for participating in AIIMS, Bhubaneswar in future.
13. **The BOQ must be filled up with quoted rates. No over writing/correction will be entertained and in case of so the quotation will be rejected.**
14. **The All India Institute of Medical Sciences, Bhubaneswar reserves the right to accept or reject all/ any part of the quotation without assigning any reason there-of.**
15. **The Quotation will be considered subject to fulfilment of eligible criteria. Incomplete quotation with reference to NIQ (Notice Inviting Quotation) will be rejected.**

TECHNICAL SPECIFICATIONS

WIRING

1. GENERAL

Technical Specifications in this section cover the Internal Wiring Installations comprising of:

- Wiring for convenience socket outlet in surface conduit.

2. STANDARDS AND CODES.

Latest upto date Indian Standard (IS) and Code of Practice will apply to the equipment and the Work covered by the scope of this contract. In addition the relevant clauses of the Indian Electricity Act 1910 and Indian Electricity Rules 1956 as amended upto date shall also apply. Wherever appropriate Indian Standards are not available, relevant British and / or IEC Standard shall be plicable.

3. CONDUITS

3.1 PVC CONDUITS

Wiring shall be carried out in concealed PVC conduits. The PVC conduits conform to Latest and shall be ISI embossed. The conduits shall be heavy gauge (minimum 2 mm wall Thickness) and the interiors of the conduits shall be free from all obstructions. All joints in Conduits shall be sealed / cemented with approved solvent cement. Damage conduits/fittings shall not be used. Cut ends of conduits shall not have sharp edges.

3.2 BENDS

As far as possible, the conduit system shall be so laid out that it shall obviate use of tees, elbows and sharp bends. No length of conduit shall have more than the equivalent of two quarter bends from inlet to outlet.

3.3 CONDUIT ACCESSORIES

3.3.1 STANDARD ACCESSORIES

The conduit wiring system shall be complete in all respects, including their accessories. Bends, couplers etc. shall be solid or inspection type as required, in concealed type of works. The accessories shall conform in all respects to the relevant IS. Samples shall be got approved by Engineer-In-Charge before use.

3.2.2 FABRICATED ACCESSORIES

Wherever required, outlet boxes of required sizes shall be fabricated from 1.6 mm thick MS sheets which shall be fabricated from minimum 3 mm thick sheets. The outlet boxes shall be of approved quality, finish and manufacture. Suitable means of fixing connectors etc., if required, shall be provided in the boxes. The boxes shall be protected from rust by zinc phosphate primer process. Boxes shall be finished with minimum 2 coats of enamel paint of approved colour. A screwed brass stud shall be provided in all boxes as earthing terminal.

4. WIRES

Wiring shall be carried out with FRLS insulated 660/1100 volt grade unsheathed single core wires with electrolytic annealed stranded copper (unless otherwise stated) conductors conforming to latest IS Code. All wire rolls shall be ISI marked. All wires shall bear manufacturer's label and shall be brought to site in new and original packages. Manufacturer's certificate, certifying that wires brought to site are of their manufacture shall be furnished as required.

5. LAYING OF CONDUITS

- Conduits shall be laid in concealed on walls and ceilings as required.
- Same rate shall apply for concealed Conduiting in this contract.
- Stranded copper conductor insulated wire of size as per schedule of quantities shall be Provided in entire Conducting for loop earthing.
- GI wire of suitable size to serve as a fish wire shall be left in all conduit runs to facilitate Drawing of wires after completion of Conduiting.

6. CONCEALED CONDUITING

Wherever so desired, conduit shall be laid in concealed in wall or in concrete of approved make and Neat appearance and good workmanship of concealed Conduiting work is of particular importance.

6.1 FIXING OF CONDUIT FITTINGS AND ACCESSORIES

For concealed Conduiting work, the fittings and accessories shall be completely embedded on finished wall/ceiling in a workman like manner. Loop earthing wire shall be connected to a screwed earth stud inside outlet boxes to make an effective contact with the metal body.

6.2 CLEANING OF CONDUIT RUNS

The entire conduit system including outlets and boxes shall be thoroughly cleaned after completion of erection and before drawing in of cables.

6.3 PROTECTION AGAINST DAMPNES

All outlets in conduit system shall be properly drain and ventilated to minimize chances of condensation/sweating.

6.4 LOOP EARTHING

Loop earthing shall be provided by means of insulated stranded copper conductor wires of sizes as per Schedule of Quantity laid along with wiring inside conduits for all wiring outlets. Earthing terminals shall be provided inside all switch boxes, outlet boxes and draw boxes etc.

7. LAYING AND DRAWING OF WIRES

7.1 BUNCHING OF WIRES

Wires carrying current shall be so bunched in conduits that the outgoing and return wires are drawn into the same conduit. Wires originating from two different phases shall not be run in the same conduit.

7.2 DRAWING OF WIRES

The drawing of wires shall be done with due regard to the following precautions: - No wire shall be drawn into any conduit, until all work of any nature, that may cause injury to wire is completed. Burrs in cut conduits shall be smoothen before erection of conduits. Care shall be taken in pulling the wires so that no damage occurs to the insulation of the wire. Approved type bushes shall be provided at conduit terminations. Before the wires are drawn into the conduits, conduits shall be thoroughly cleaned of moisture, dust, dirt or any other obstruction by forcing compressed air through the conduits if necessary. While drawing insulated wires into the conduits, care shall be taken to avoid scratches and kinks which cause breakage of conductors. There shall be no sharp bends. The Contractor shall, after wiring is completed, provide a blank metal/sunmica plate on all switch / outlet / junction boxes for security and to ensure that wires are not stolen till switches / outlets etc. are fixed at no extra cost the contractor shall be responsible to ensure that wires and loop earthing conductors are not broken and stolen. In the event of the wire been partly / fully stolen, the contractor shall replace the entire wiring along with loop earthing at no extra cost. No joint of any nature whatsoever shall be permitted in wiring and loop earthing.

7.3 TERMINATION /JOINTING OF WIRES

Sub-circuit wiring shall be carried out in looping system. Joints shall be made only at distribution board terminals, switches for socket outlets. No joints shall be made inside conduits or junction/draw/inspection boxes. Switches controlling socket outlets shall be connected in the phase wire of the final sub circuit only. Switches shall never be connected in the neutral wire. Wiring conductors shall be continuous from outlet to outlet. Joints where unavoidable, due to any special reason shall be made by approved connectors. Specific prior permission from Engineer-In-Charge in writing shall be obtained before making such joint. Insulation shall be shaved off for a length of 15 mm at the end of wire like sharpening of a pencil and it shall not be removed by cutting it square or wringing. Strands of wires shall not be cut for connecting terminals. All strands of wires shall be twisted round at the end before connection. Conductors having nominal cross sectional area exceeding 1.5 sq. mm shall always be provided with crimping sockets. Tinning of the strands shall be done wherever crimping sockets are not available as per instructions of the Executive Engineer (Electrical). All wiring shall be labelled with appropriate plastic ferrules for identification. At all bolted terminals, brass flat washer of large area and approved steel spring washers shall be used. Brass nuts and bolts shall be used for all connections. The pressure applied to tighten terminal screws shall be just adequate, neither too much nor too less. Switches controlling socket outlets shall be connected to the phase wire of circuits only. Only certified valid license holder wiremen shall be employed to do wiring / jointing work.

7.4 LOAD BALANCING

The Contractor shall plan the load balancing of circuits in 3 phase installation and get the same approved by the Engineer-In-Charge before commencement of the work.

7.5 COLOUR CODE OF CONDUCTORS

Colour code shall be maintained for the entire wiring installation - red, yellow, blue for three phases, black for neutral and green for earth.

8.1 SWITCHES

The 16 amps switches shall be of the modular enclosed type flush mounted 220 Volt AC of the best quality and standard or as approved by Engineer-In-Charge. The switch moving and fixed contacts shall be of silver nickel and silver graphite alloy and contact tips coated with silver. The housing of switches shall be made from high impact resistant, flame retarding and ultra violet stabilized engineering plastic material.

8.2 FLUSH PLATES

Switches in wall shall be provided with molded cover plates of shape, size and colour approved by the Engineer-In-Charge made from high impact resistant, flame retarding and ultra violet stabilized engineering plastic material, and secured to the box with counter sunk round head chromium plated brass screws. Plate, 16 amps switched plates shall have the same shape and size. Extra openings shall be provided with blank-off.

8.3 WALL SOCKET OUTLETS

The 16 Amps wall socket outlets unless otherwise mentioned on the drawings shall be switched, five/six round pin and fitted with automatic linear safety shutters to ensure safety from prying fingers. Un-switched 16 amp wall socket outlets where called for in the drawings shall be of five/six round pin type. The socket outlets shall be made from high impact resistant, flame retarding and ultra violet stabilized engineering plastic material. The switch and sockets shall be located in the same plate. All the switched and un-switched outlets shall be of the best standard. An earth wire shall be provided along the cables feeding socket outlets for electrical appliances. The earth wire shall be connected to the earthing terminal screw inside the box. The earth terminal of the socket shall be connected to the earth terminal provided inside the box.

9. MEASUREMENT AND PAYMENT OF WIRING

Wiring for convenience socket outlets shall be measured from MCB Distribution board to socket outlet as running metre. Paid for on running metre as itemized schedule of quantities and as elaborated as below unless otherwise stated.

10. ROUTINE AND COMPLETION TESTS

10.1 INSTALLATION COMPLETION TESTS

At the completion of the work, the entire installation shall be subject to the following tests:

1. Wiring continuity test

2. Earth continuity test

All tested and calibrated instruments for testing, labour, materials and incidentals necessary to conduct the above tests shall be provided by the contractor at his own cost.

10.2 PERFORMANCE

Should the above tests not comply with the limits and requirements as above the contractor shall rectify the faults until the required results are obtained. The contractor shall be responsible for providing the necessary instruments and subsidiary earths for carrying out the tests. The above tests are to be carried out by the contractor without any extra charge.

11.1 MINIATURE CIRCUIT BREAKERS

The MCB's shall be of the completely moulded design suitable for operation at 240/415 Volts 50 Hz system. The MCB's shall have a rupturing capacity of 10 KA at 0.5 p.f. The MCB's shall have inverse time delayed thermal overload and instantaneous magnetic short circuit protection. The MCB time current characteristic shall coordinate with XLPE cable characteristic. Type test certificates from independent authorities shall be submitted with the tender.

12. LT Cable Laying: Cable laying work carried out as per CPWD General Specification of electrical work.

13. Switch Socket outlets/ Light Switches/ MCB DB Shall be mounted as per the General Specifications for Electrical Works, Part-1, internal 2005, at a level mentioned below unless specified otherwise. All dimensions noted below shall be from Finished Floor Level to the bottom line of the face plate.

(i) Light Switches – 1250 mm

(ii) 5A/6A and 15A/ 16A Switch socket outlets – Socket will be 2000 mm for the Geyser above FFL and at least 1000 mm away from the shower. The switch will be 1250 mm above FFL.

(iii) MCB DB – 1500 mm

APPROVED MAKE LIST

Sl. No.	Item Name	Name of the Make
1	PVC conduit and accessories	AKG, BEC or Approved make
2	FRLS Wires and LT Cables	Polycab, Finolex, Havells or Approved make
3	G.I Modular Box and Modular Base Plate, Cover plate	Legrand, MK, Anchor
4	Switch, Socket	Legrand, MK, Anchor
5	MCBS ,RCCBS	Legrand, Havells, L&T
6	MCB DBS	Legrand, Havells, L&T
7	Light Fixtures	Finolex, Havells, Philips, Bajaj, CG
8	Exhaust Fan	Finolex, Havells, Philips, Bajaj, CG

Superintending Engineer
AIIMS, Bhubaneswar

CC To,

1. The Director, AIIMS, Bhubaneswar.
2. The Deputy Director (Admn.), AIIMS, Bhubaneswar.
3. The Financial Advisor, AIIMS, Bhubaneswar.
4. Administrative Officer with a request to Up Load in Institute Web Site.
5. The Executive Engineer (Electrical), Project Cell, AIIMS, Bhubaneswar.

UNDERTAKING

I/We _____ (Name of Quotationer with Address) have been doing the works for the Govt. Departments/Central PSUS/State PSUS for the lastyears and I/We certify that i/We have never been blacklisted/debarred by any of the Govt. Department/Central PSUs/State PSUs on account of any of the default on our part in execution of the projects/works. I/We also undertake to mention that if at any point of time it comes to the notice of AIIMS, Bhubaneswar that the above undertaking given by me/us is false then AIIMS, Bhubaneswar will be at liberty to forfeit Security Deposit and also to terminate the contract.

Name of Contractor with address



All India Institute of Medical Sciences
Ministry of Health & Family Welfare, Government of India
Bhubaneswar (Odisha) - 751 019

BILL OF QUANTITIES (BOQ)

Name of the work: - Supply, Installation, Testing and Commissioning of Electrical works at public toilet in Hospital Complex of AIIMS, Bhubaneswar.

Item No.	Description of items	Unit	Qty.	Rate	Amount
1	MCB DISTRIBUTION BOARD				
1.1	Supplying and fixing of following way, single pole, sheet steel, MCB distribution board, 240 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required, of approved make (Legrand,crabtree,L&T(EXORA). (But without MCB/RCCB/Isolator)				
	8 way, Double door	Each	2		
1.2	Supplying and fixing 5 A to 32 A rating ,240/415 V,10 KA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections ,testing, and commissioning etc. as required.				
(i)	Single pole(16A=4 Nos,10A=4 Nos)	Each	8		
(ii)	Double pole (32 A)	Each	2		
1.3	Supplying and fixing following rating, double pole ,(single phase and neutral), 240 V, residual current circuit breaker (RCCB), having a sensitivity current 30 mA in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
	Double Pole (40 A)	Each	2		
2.0	Wiring				
2.1	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm. FRLS PVC insulated copper conductor cable, single core/ multi strand, in surface/ recessed ISI marked PVC conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq. mm FRLS PVC insulated copper conductor single core/ multi strand cable etc. as required of approved make (KEI, polycab,				

	finolex, havells etc.).				
	Point wiring as mentioned above	Point	34		
2.2	Wiring for light/power plug with 2x4 sq. mm FRLS PVC insulated copper conductor single core cable in surface/recessed medium class PVC conduit along with 1 No. 4 sq. mm FRLS PVC insulated copper conductor single core cable for loop earthing as required.	Mtr	50		
2.3	Wiring for circuit/ submain wiring along with earth wire with the following sizes of PVC insulated copper conductor single core/ multi strand cable in surface/recessed ISI marked PVC conduit as required.				
	2X2.5 Sq. mm + 1X 2.5 sq. mm earth wire	Mtr	60		
2.4	Supplying and fixing 6 pin 5/6 A and 15/ 16 A modular socket outlet with shutters in suitable modular metal box on surface or in recess including, modular cover plate, base plate, connections, etc. complete as required.	Each	4		
3.0	LIGHT FIXTURES AND FANS				
3.1	Supply of 9 watt LED tube light (2 ft) fixture with all fixing accessories as required of approved makes (Finolex/Havells/Philips/Bajaj/CG).	Each	22		
3.2	Supply of 1400 RPM, 300 mm sweep exhaust fan suitable for single phase, 230 volts, 50 Hz, AC supply complete with motor, louvers/shutters etc. as required of approved makes (Finolex/Havells/Philips/Bajaj/CG).	Each	12		
3.3	Installation, testing and commissioning of wall bracket /ceiling fittings of all sizes and shapes containing upto two GLS/CFL/LED lamps per fitting, complete with all accessories including connections etc. as required	Each	22		
3.4	Installation of exhaust fan in the existing opening, including making good the damage, connection, testing and commissioning etc. as required.				
	Upto 450 mm sweep	Each	12		
4.0	LT CABLES				
4.1	Supply of following sizes of 1.1 kV grade multicore aluminium conductor PVC sheathed armoured cable as per IS 1554.				
	4 Core 10 Sq. mm.	Mtr	100		
4.2	Laying of one number PVC insulated and PVC sheathed power cable 1.1kV grade direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required				
	Upto 35 sq. mm.	Mtr	75		

4.3	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 kV grade of following size on wall surface as required				
	Upto 35 sq. mm (clamped with 1mm thick saddle)	Mtr	25		
4.4	Supplying and making end termination with brass double compression glands of following sizes of 1.1. KV grade multicore aluminium conductor PVC insulated and PVC sheathed				
	4 C X 10 Sq. mm.(25 mm)	Each	4		
		Total			