

TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COM-MISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPM, MYSORE.- 570003.

## **ANNEXURE-1**

### **TECHNICAL SPECIFICATIONS**



TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE **CISF QUARTERS BUILDING BNPM, MYSORE** – 570003.

**Other Conditions**

1. Site:

The contractor shall remove all surplus materials, debris etc. out of the BNPMIL Campus from the site of work on completion work and will hand over the site clean before the bill is processed for final payment. Dismantled materials if any (declared by Engineer-in-charge of the work) shall be returned to the Estate/ Electrical stores by the contractor at his own cost. The disposal of material shall be done in environmental friendly way and complying with the local rules and regulations.

2. Security

**a. Movement of contractor's materials:**

Any materials which are removed from the site of work and are required to be taken out from the BNPMIL campus, the contractor should follow the following procedure:

The contractor shall apply in writing to the Engineer- in-charge the details of the materials to be removed including which are rejected etc. This application shall be endorsed by the engineer in charge or his authorized representatives. The materials shall only be allowed to go out of BNPMIL campus after counter signature of the security officer and checked at the gate. No materials/tools will be allowed to be brought on holidays/Saturdays/Sundays inside the campus. Contractors can bring the materials/tools/between 0900 hours and 1700 hours on any working day (Monday to Saturday). This may please be noted.

**b. Search:**

Thorough search of all persons and transport shall be carried out at each gate and for as many times as gate is used for entry or exit and may also be carried out at any time or any number of times at the works site within the restricted area.

**c. Working Hours:**

The units controlling restricted areas usually work during Six days in the week and remain closed on Sunday. The working hours available to contractor's labor and staff are however appreciably reduced because of the time of entry and exit during working hours. The exact working hours, working days and non-working days observed for the restricted areas where works are to be carried out shall be deemed to have been ascertained by the contractor before submitting the tender. The tenderer's attention is invited to the fact that the total number of working hours for units are prescribed in regulations and no work beyond the prescribed working hours shall be permitted.

**d. Entry and Exit:**

The contractor, his agents, representatives, workmen, etc. and his materials, carts, trucks or other means of transport, etc. will be allowed to enter through and leave from only such gate or gates and at such times as the concerned authorized in charge of the restricted area may, at their sole discretion, permit. Contractor's authorized representatives, if required, are to be present at the places of entry and exit for the purpose of identifying his carts, trucks, etc. to the personnel in charge of the security of the restricted area.



TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE **CISF QUARTERS BUILDING**  
**BNPM, MYSORE** – 570003.

**e. Temporary Identity Permits:**

The contractor or his representatives/site in charge, overseers and other regular staff are required individually to be in possession of identity cards or temporary entry permit which will be issued by the security section on the recommendation of the Project Engineer.

**f. Labour Law:**

The work will be executed strictly following the Labour Laws of Central Govt & State Govt as may be applicable.

**TENDERER SHALL VISIT THE SITE:**

Intending Tenderer shall visit the site and make himself thoroughly acquainted with the local site conditions, nature and requirements of works, facilities of transport condition, effective labour and materials, access and storage for materials and removal of rubbish. The Tenderer shall provide in his tender cost of carriage, freight and other charges as also for any special difficulties and including police restriction for transport etc. for proper execution of work as indicated. The successful Tenderer will not be entitled to any claim of compensation for difficulties faced or losses incurred on account of any site condition which existed before the commencement of the work or which in the opinion of the Employer / Consultant might be deemed to have reasonably been inferred to be so existing before commencement of work.

**3. REMOVAL OF IMPROPER WORK ::**

31.1. The Employer shall during the progress of the work have power to order in writing from time to time the removal from the work within such reasonable time or times as may be specified in the order of any materials which in the opinion of the Employer / Consultant are not in accordance with specification or instructions, the substitution or proper re-execution of any work executed with materials or workmanship not in accordance with drawings and specifications or instructions.

31.2 In case the Contractor refuses to comply with the order the Employer shall have the power to employ and pay other agencies to carry out the work and all expenses consequent thereon or incidental thereto as certified by the Employer / Consultant shall be borne by the contractor or may be deducted from any money due to or that may become due to the contractor. No certificate which may be given by the Consultant shall relieve the contractor from his liability in respect of unsound work or bad materials or design. Statutory Acts & Rules of Electricity Board, the persons so employed shall have the requisite supervisory permit or wireman permit for appropriate nature of work undertaken.

**31.3 No Child Labour:**

No labour below the age of eighteen years shall be employed on the work. In case of electrical works, the labour employed by the tenderer or their sub-contractor should be authorized person as permitted by the Chief Electrical Inspectorate office of the respective State Government. The Employer shall not be responsible for any deviation and the Tenderers shall indemnify the Employer from any legal action or in any way directly or indirectly.



**TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPM, MYSORE – 570003.**

<b>TECHNICAL SPECIFICATION</b>		
	<b>Specifications</b>	<b>Remarks of bidder</b>
Application	Passenger, handicap friendly	
Type	Machine Room less	
Motor	Permanent Magnet, Gearless, Drive Motors - IP 54, suitable for 415 V, 3 phases, 3 wire, 50 Hz , Drive motor shall be suitable for VFD application.	
Capacity	544kg (8 passenger)	
Rise	21.50M	
level/stops	Stilt+G+5 floors ( 7 Stops) (all opening on the same side)	
Speed	1.0 meter per second with jerkless acceleration, deceleration and stopping with 3mm level accuracy	
Drive	Full Collective, VF Regenerative (Closed Loop) 3VF - Variable Voltage & Variable Frequency Drive based for auto-matic operation Latest model & Energy Efficient VFD shall be opted Approved Brands of VFD / Motors : ABB/SIEMENS/SCHNEIDER/YASKAWA/L&T/Vacon	
Power supply	AC 400/440V, 3 phase and single phase,50cycles/sec.	
CONTROLLER TYPE	Variable Voltage & Variable Frequency Drive based for automatic operation	
OPERATION	Full collective operation	
CAR GROUP	One car (simplex)	
MACHINE	PM Gearless (Located above shaft)	
TRACTION MEDIA	Flat Coated Steel Belt	
Car Finish design	All side( Rear, Corner, Side and Front Panels)Stainless Steel Hair Line finish of 304 Grade SS (Equivalent not accepted)	
Car door finish	Stainless Steel Hair Line finish of 304 Grade SS (Equivalent not accepted)	



**TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISE QUARTERS BUILDING BNPM, MYSORE – 570003.**

Landing door finish	Stainless Steel Hair Line finish of 304 Grade SS (Equivalent not accepted)	
Car door	Automatic door Centre opening Car door panels	
False Ceiling type and finish	CD-41/ Stainless Steel Hair Line finish of 304 Grade SS (Equivalent not accepted)	
Ventilation	Cross Flow Fan	
Car door protection	Multiband full height infra-red detector.	
HAND RAILS	Stainless Steel Mirror Finish Handrails on rear car panels	
Direction & Position indicators	Large display LCD Car Position Indicator in COP at lower height	

Car Flooring	Anti-skid Vinyl flooring slip resistant.	
Car lighting	<p>Lighting levels in the lift are a minimum of 100 lux (approximately 50-75 lux at floor level and shall be confirmed using Luxmeter) (only LED fittings shall be used)</p> <p>1.Lift Shaft Lighting , Lift Machine room , Lift Car lighting shall be included in the scope of bidder only</p> <p>2.All lamps &amp; luminaire shall be LED fittings only</p> <p>3. At least one Emergency light fitting provided shall be provided in the Lift Shaft, Machine room &amp; Car ( Emergency light units (ELU) as applicable shall be provided )</p> <p>4. Hand bulb/Shaft bulb shall be provided on the top of the car for shaft inspection &amp; maintenance purpose</p> <p>5. Light fitting &amp; single phase socket shall be provided inside ELectrical &amp; Control panels</p> <p>6. ELCB shall be provided for all the lighting circuits with earthing and 3 phase cabling</p>	
COP suitable for physically handicap &Visually impaired	Protruding type Brail encrypted Car buttons at a height easily accessible bywheelchair bound or visually impaired passenger. COP for stops <= 12 (950mm) in Stainless Steel 304(Hairline)	

**TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISE QUARTERS BUILDING BNPM, MYSORE – 570003.**

Car position Indicator	Monochrome LCD-Blue Background & White font	
Hall Fixtures	O2000	
CAR DIMENSIONS (W x D x H - mm)	1100 mm W x 1300 mm D x 2200 mm D	
HALL FIXTURE FACE PLATE	Stainless Steel Hair Line finish of 304 Grade SS (Equivalent not accepted)	
CAR & HOISTWAY DOOR TYPE	Central opening (CO) doors	
HALL BUTTON ARRANGEMENT	Hall Button with HPI	
Pit depth	As per standard – 1350	
DOOR OPENING (W x H - mm)	As per standard – 800 mm W x 2000 mm H	
Overhead height	As per standard 4500	
DOOR OPERATOR	DC Door Operator	
Hoistway Dimensions (W x D - mm)	2000 mm W x 2000 mm D	
entrance height	As per standard	
inside car height	As per standard	
<b>CAR INSIDE</b>	<p>Operating Devices - UP/DOWN Push Buttons , Door Open/Close buttons  Number push buttons for each floor landing  Alarm &amp; Emergency Stop Push buttons  UP/DOWN direction travel indication  Overload warning indicator with alarm  Intercom Telephone Set is required</p> <p>Near Floor Landing - Operating Devices  UP/DOWN Push button  Call Registered indication shall be included  UP/DOWN direction travel indication  Out of order / Maintenance indicator</p>	
Cables	<p>All Cables ( Power / Control / Signal / CCTV/ CAT-6 Ethernet cables etc.) shall be travelling grade lift duty cables only  Copper cables shall be preferred  CAT-6 cables are preferred for necessary LAN connectivity  Technical specifications shall be as per IS 4289 as applicable</p>	

**TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISE QUARTERS BUILDING BNPM, MYSORE – 570003.**

Safety Aspects	Buffer, rope & counterweight, Guide rails, Brake for fail to safe, Over speed governor & safety gear, Overload protection device & alarm, Short Circuit , Earth fault protection , Phase failure & phase reversal protection for motor, Retiring Cam. Earthing of the equipment	
Special features	<p>Full Height 2D electronic cross beam detectors</p> <p>Large display LCD Car Position Indicator inCOP at lower height</p> <p>Hand rails on three sides with height not more than 900mm from floor</p> <p>Voice announcement for all COP operations for visually impaired user Overload Warning with audio visual indicators</p> <p>Nudging, Emergency Firemen's Service Auto fan and Light Cut-off, Automatic &amp; Manual Rescue Operation Device.</p> <p>Door open/Door close button in car.</p> <p>IP Addressable CCTV provision in the lift 2MP, fixed dome type, 120dB WDR, ONboard storage with 128GB memory stick, vandal proof housing for the Lift Cabin – This shall be integrated with the existing Surveillance system of the BNPMIL.</p> <p>Anti-Nuisance Travel Independent Service (for Duplex only) Emergency Car Light Unit Infrared Curtain Door Protection Door Time Protection, Emergency Alarm Button Extra Door Time of Lobby &amp; Parking Belt Inspection Drive Alarm Button</p> <p>EPABX system connectivity provision shall be available in the Lift Controller for integration with Building management system</p>	



**TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPM, MYSORE – 570003.**

	<p>RS232/RS485 necessary port provision shall be provided in the controller</p> <p>Provision for Fire Detection &amp; Alarm System connectivity &amp; integration shall be provided in the Lift controller</p> <p>Traction media / Rope / Counter weights shall conform to the IS Standards IS : 1173 , IS: 4666 wherever applicable</p> <p>Design guidelines , components , maintenance aspects , Electrical aspects shall conform to the standard - IS 14665 wherever applicable</p>	
OPTIONS INCLUDED	Car Chime, Automatic Rescue operation, Voice Synthesizer, Intercom, CCTV Provision, Ladder to be provided in the lift pit for the maintenance	
Approvals	CEIG approval & all statutory/Compliance related approvals & Liasioning shall be included in the scope of bidder only	

**TECHNICAL SPECIFICATIONS**

1. BNPMIL proposes to erect Two numbers- 8no passenger elevator in the CISF Building @ BNPMIL Campus

**2. SCOPE**

The scope of Bid is to cover design, drawings, manufacture, supply, install, test, commission, obtain all necessary statutory approval and maintenance of Lifts during the Guarantee Period in the Building complex as per the Bid documents and Bid drawings. The scope also includes minor Civil and Structural steel works connected with the installation of Lifts.

All electrical works connected with Lifts beyond power supply point shall also be included in the scope of the Bid as per this document. During the guarantee period/DLP of One year after successful commissioning, handing over of Lift and taking over by the Employer, the Bidder shall carry out comprehensive maintenance of Lift free of cost. After this guarantee period/DLP, the Employer will reserve the right to enter into Annual Maintenance Contract as described in the Bid document.

The make of materials mentioned in the Bid document are indicative only and are, by and large, of Indian Origin. Any other equivalent product of International Repute will be ac-



TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPM, MYSORE – 570003.

ceptable subject to the products satisfying the specified Technical and Operational parameters and subject to prior approval of the Consultant / Employer.

Employer reserves the right to select different agencies for the above works and award the work either directly or through the Main Contractor by nomination as specified elsewhere in the Bid.

3. The equipment supplied and erected shall be in accordance to updated version of IS-4666/1968, 1860/1968 & 1980 and IS:14665-2001, IS:3534/1979. Fire protection requirement as per IS and local authority's requirement shall also be complied with. The Lifts in accordance with any other International Standards, which are superior than IS standard, shall also be considered.

4. The Bidder shall note the following in the Lift Service particulars covered herein.

- a) Capacity & Numbers.
- b) Travel height, number of stops and openings.
- c) Type of Drive,
- d) Type of Safety Gear, door safety
- e) Type of Control and operation.
- f) Interface leads to be left for Building Management / Automation System.
- g) Amenities and finishes in Lift Car.

5. The Bidder shall furnish any other details relevant to the work and not covered in the Bid with financial bearing, if any, explicitly.

6. As the Bid documents shall form part of the Agreement, the provisions covered therein should be noted carefully and any deviation felt necessary therefrom shall be highlighted at the time of bidding only and not after. For this a statement of deviation, if any shall be prepared by Bidder and shall be enclosed in the first envelope super-scribed "Technical Bid". If no deviation is proposed, still this form shall be submitted with an entry "No deviation proposed". No deviation in commercial conditions is acceptable.

7. The Bidder shall give rates for all items given in the schedule of quantities.

8. The current statutory requirement as per Lift Rules of Local Authority as applicable shall be complied with, no extra payment shall be considered either due to escalation or amendments / modifications to Local Authority Rules issued during the contract period.

9. The Bidder/ Contractor shall be responsible to obtain necessary License from Lift Authority, Government of KARNATAKA

**10. Terminal points:**

The terminal point (s) Viz. Civil work and other services shall be as follows:

TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE **CISF QUARTERS BUILDING**  
**BNPM, MYSORE** – 570003.

**Civil works:**

BNPMIL Mysore shall complete the Lift shaft and pit to the required dimensions including plastering and painting. Hoist way / openings and the Machine room of required sizes shall be made available by BNPMIL Mysore for erection of equipment's well before its receipt at site. BNPMIL Mysore shall be responsible for water proofing of the lift pit. BNPMIL Mysore shall also complete lift machine room /closed required hoist way with lockable doors and windows in all respects including lighting. All other civil activities for Lift installation shall be within the scope of the Lift Contractor and shall fall within the Lift Contractor's responsibility.

All minor Civil works are under Lift Contractor's responsibility that include Cutting, Chasing and making good of the same at all levels, conceal the conduits and boxes for Panels. etc. The minor Civil work shall also include items connected with fixing of Sill plate / Sill slab projection, fixing of buffer springs in the lift, fixing and mounting beams, bearing plate etc. at the Lift Machine room.

**MECHANICAL:**

- 1.1.1 The passenger elevator shall be of latest design having directional group collective control with or without attendant. Digital indicators and illuminated buttons shall be provided in the car and at the landings, as per technical specification. The car should be accommodated in the elevator shaft and elevator pit within the dimensions recommended by relevant standards and enclosed drawing. (in the present case, within the dimension of the existing lift well )
- 1.1.2 The elevator shall be designed in accordance with the latest edition of IS:14665-2000 ( Part 2) and other relevant specifications and subject to any modifications and recruitments specified hereinafter.
- 1.1.3 Safe access for maintenance and removal of all mechanical and electrical parts shall be ensured.
- 1.1.4 All parts requiring replacement or inspection, or lubrication shall be easily accessible without the need for Dismantling of other parts/ equipment. All electrical cables shall be laid such that they are not liable to damage and can be easily inspected and maintained.
- 1.1.5 All machinery or equipment included under this specification shall be equipped with safety devices and clearance to comply with recognized standards and purchaser's requirement.
- 1.1.6 Difference in levels of the car floor and landing, shall be within + or -5 mm. Welding shall be carried out as per relevant IS Standards.
- 1.1.7 To relieve the load on the hoisting mechanism, the weight of the cage shall be balanced with a suitable counterweight connected by ropes with the drum of the hoisting machine and the cage.

TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE **CISF QUARTERS BUILDING BNPM, MYSORE** – 570003.

- 1.1.8 Suitable lubrication system shall be provided for guide rails as well as for other items.
- 1.1.9 hoist shall have adjustable self-aligning hitches.
- 1.1.10 Steel T- Guards shall be provided for the car and the counterweight. be guarded/ protected by means of wire mesh cage for safe operation.
- 1.1.11 Spring buffers shall be provided as a means of stopping the car and counter weight at the extreme limits of travel. Buffers in the pit shall be mounted on steel channels which extend between both the car and the counter weight guide rails

**Electrical Works:**

1.1 Power supply – 1&3 Phase, 230/400 Volts 50 Hz Power supply will be provided at panel in ground floor by the BNPMIL by a main Switch in Main panel.

The lift contractor's scope will be extending the power supply from panel at ground floor to machine room.

Motor earthing (GI plate) & 2 no's 8SWG copper wire with pit etc. all as per IS 3043, MCB DB with MCBs / isolators in /at required place and further electrical works like wiring in lift shaft etc.

The signals from the Fire mode services of the Lifts shall be integrated into the overall fire alarm system, forming part of the work site / building. For this purpose, sufficient potential free leads shall be left by the Lift Contractor at appropriate locations from which the building will connect the interface to BNPMIL.

Electrical works shall be in accordance with the CPWD General Specifications for ELECTRICAL WORKS - Part-III (Lifts & Escalators)

All tenderers should visit the site before quoting. So it will be assumed that the work has been quoted considering present site condition and the work will be completed in all respect without claiming anything extra.

**1.2 ELECTRICAL:**

- 1.2.1 The scope of supply shall include all the electrical equipment/ items required for smooth and efficient operation of elevator. The scope includes the following:
  - a) The elevator electrics such as protective switch gear, motors, drive control panels, car operating panels, brakes, limit switches, cables, lighting of car/ cage, push buttons, emergency switch, signaling devices and other necessary equipment required for efficient operation of the elevator.
  - b) Complete lighting of elevator car etc.
  - c) Earthing point. (Nearest Earthing Point will be provided by the Purchaser).
  - d) All sundry erection materials required for installation and wiring of electrical equipment and for cable laying.
  - e) Statutory clearances, approvals from CEIG, Electricity Board, CITY CORPORATION etc is in the scope of supplier
  - f) Emergency alarm wired to both ground and machine room

TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISE QUARTERS BUILDING  
BNPM, MYSORE – 570003.

- g) Emergency light with maintenance free battery shall be provided
  - h) Mechanical terminal limit switches
  - i) Overload warning device
  - j) Emergency key opening at all landing doors k)
  - Fireman's switch at Ground floor
  - l) Manual raising or lowering of the lift in case of emergency
  - m) Safety gear : In the event of rope breaking or loosening the car shall be Brought to rest by means of gibbs on the guides
  - n) Motor Protection : The motor shall be protected with circuit breaker
  - o) Car light fittings, fan etc.
  - p) A switch also shall be provided inside the car for the car fan apart from its automatic function
  - q) A button for reversing the door while closing shall be provided in the panel
  - r) Key operating switch for cutting in and out the additional equipment for "WITH ATENDANT OPERATION"
  - s) Up and Down scrolling indicators for indicating the direction of movement of the car
  - t) The car automatically returns to the home landing after answering the last pending calls u) Automatic Rescue Device with necessary UPS and battery BNPMIL.
- 1.2.2 The equipment offered shall be suitable for trouble free and efficient service in the following site conditions:
- 1) Ambient temperature: 40 degree C (max).
  - 2) Humidity: 100%; both not occurring simultaneously.
- 1.2.3 The electrical equipment shall comply with the latest revision of relevant standards and wherever such Indian Standard is not available, International codes and practices shall be followed. The equipment shall be dust and water proof.
- 1.2.4 Electrical equipment shall conform to latest Indian electricity rules and regulations and the statutory requirement of Government of India and the Government of Delhi State as regards to the safety requirement, earthing and other essential provisions specified therein.
- 1.2.5 The materials used and the equipment supplied shall be new, reliable and of the class most suitable for the purpose for which they are intended. The equipment designed and the installation shall allow easy access to facilitate inspection, maintenance and repairs.
- 1.2.6 Test Certificates of each equipment shall be submitted before installation of each equipment.
- 1.2.7 The power shall be made available by the Purchaser in the machine room at 415 V, 50 HZ (as per Electricity Supply voltage), 3 phases for each elevator. The short circuit level of the power supply system shall be taken as 35 KA symmetrical at 415 volts, 50 HZ and the equipment shall be designed for this condition. For lighting, supply will be made available in elevator machine room at 230 V Single phase.
- 1.2.8 The operating voltage for control supply shall be indicated by the Tenderer
- 1.2.9 The control panels to be provided in the machine room shall be suitable for floor/ wall mounting. This shall be fabricated from steel sheet of 2mm thickness. The bottom most equipment shall be mounted at least 380 mm above the floor level of the panel.( Any alteration in the level of pit will be carried out by the purchaser. The layout of components in control panel shall be so as to provide adequate safety clearances and ease of operation and maintenance Electrical & control panels shall have degree of protection - IP of atleast IP54
- 1.2.10 The minimum rating of the isolating switch and contactor shall be 63A and 32 A or 125% the full load current of the drive, whichever is higher.
- The switches shall be suitable for AC 23 duty. The contactor shall be suitable for AC 3 or AC4 duty as applicable. The overload relay shall have in built single phasing protecting.

**TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPM, MYSORE.– 570003.**

- 2.2.11 Gearless Motor PMSM shall be provided of min class 'B' insulation shall be provided. They shall be suitable for heavy duty reversible, frequent starting, elevator service. The elevator manufacturer shall ensure that the motor selected has adequate thermal capability to meet the most onerous operating cycle likely to be encountered in the actual operation. Motors shall be VVVF system controlled and shall be capable of achieving desired speed and smooth running and stopping of elevators.  
Gearless machine shall consist of a motor, traction sheave & brake drum or brake disc completely aligned on a single shaft. Gearless machine shall be A.C Gearless with VVVF Drive
- 2.2.12 The motor shall conform to latest revision of BIS 325. The enclosure class for motor shall be of Min IP 54. There shall be an earthing terminal inside the terminal box.
- 2.2.13 The starting of the motor shall be smooth irrespective of the load/ direction of movement. Suitable control scheme incorporating Thyristors/VVVF system shall be incorporated to achieve smooth acceleration/ deceleration.
- 2.2.14 The elevator control shall be Microprocessor based to ensure high performance with maximum efficiency of operation. The control shall be site programmable with all safety interlocks/ features. The control panel shall be with Min IP54 degree of protection. Plug in type PCBs shall be provided for ease of maintenance.
- 2.2.15 a) Suitable braking system shall be provided to hold the drive when it is switched off. b) All limit switches and other safety cum control equipment shall be heavy duty type/ suitable for elevator duty.
- 2.2.16 It shall be possible to control the elevator from inside the cabin as well as from the shaft car.
- 2.2.17 Controller shall be state of the art controller to control starting/ stopping and arrest the speed of the elevator motor and also to automatically apply brake if any of the safety devices operate or the power fails due to any cause. Door operation shall be automatic with safety interlocks.
- 2.2.18 Provision shall be made for a safety gear which shall operate in the event of free fall or over speeding of elevator car. This safety gear, while freezing the cabin mechanically to the guides, shall also interrupt the control supply through a limit switch.
- 2.2.19 The over speeding governor shall have a governor switch to interrupt the control supply in the event of over speeding.
- 2.2.20 In addition to the terminal limit switches for the final landings, pack up emergency limit switches shall be provided and shall be connected in the power circuit of the driving motor. In the event of these switches operating due to over travel, it shall be possible to operate elevator only after manually resetting the back up limit switches. For this purpose, these switches shall be installed in accessible locations for easy manual resetting.
- 2.2.21 Additional provision shall be made for opening of the landing door in case of emergency by means of a special key. The landing doors shall be so designed that their closing and opening is not likely to injure a person.
- 2.2.22 Provision shall be made to prevent the opening of any landing door when the car is passing that zone in response to a call from another landing.
- 2.2.23 An automatic floor leveling device shall be incorporated in the elevator control to ensure leveling accuracy within the specified limits.
- 2.2.24 A reverse phase relay shall be provided in the elevator control in order to protect the elevator equipment from danger against inadvertent phase reversal in course of elevator maintenance or repair. Control supply shall be made off in case of any single phasing in the system.
- 2.2.25 There shall be a provision of initiating audible and visible signals from inside the cabin in the event of elevators getting stuck between the landings due to break down or power failure. The source of supply for these signaling devices shall be through a suitable battery source with



**TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPM, MYSORE.– 570003.**

its own charger unit. A push button and a bell in the cage and a bell in the control station shall be provided along with battery. Emergency lighting fed from battery source shall also be provided in the cage.

Emergency Power Supply for lift Car : This shall include suitable battery with trickle / boost charge arrangement & inverter power pack with necessary contactors for supplying the lift fixtures in the lift car. The same battery shall also feed the alarm bell & communication equipment. Battery backup of atleast 30 minutes shall be provided in case of power failure

2.2.26 In the event of power failure there shall be a provision to operate the elevators manually to the nearest landing. Necessary devices to release the brake and turn the traction pulley shall be built into the drive. Necessary interlocks shall be provided to cut off the control supply during manual operation. It shall not be possible to operate the elevator after power reappears unless these devices are put back properly.

2.2.27 Automatic Rescue Device (ARD)

The lift shall be provided with battery operated automatic rescue device to land at the nearest floor and the doors open during the power failure.

ARD shall monitor the normal power supply in the main controller & shall activate rescue operation within 10 secs of normal power supply failure. It shall bring the elevator to the nearest floor at a slower speed than the normal run speed. It shall automatically open the door & parks the doors open. After the operation is completed by ARD, the elevator is automatically switched over to normal operation as soon as normal power supply resumes.

All lift safety interlocks shall remain active during the ARD operation

The battery capacity shall be adequate so as to operate the ARD atleast seven times a day provided the duration between the usage is atleast 30 minutes

2.2.28 Call indicators to inform the attendant, under attendant mode that the elevator car is required at a certain floor shall be provided.

2.2.29 Indicators to show the position of elevator car and the direction in which it is traveling shall be provided both inside the cabin and at each landing.

2.2.30 Tenderer shall furnish typical control schemes and details of controls offered.

2.2.31 The elevator cars, elevator shafts and elevator well shall be adequately illuminated by electric light. Elevator cars shall also be provided with ventilating fan.

2.2.32 The cables used in the elevators installation shall conform to latest revision of IS 4289.

2.2.33 The circuit which supplies current to the motor shall not be included in any multi-core cable used in connection with the control/ safety devices/ signaling equipment.

cable which incorporates conductors for the control circuit shall be separate and distinct from that which incorporates lighting and signaling circuits. All control and signaling cables shall have stranded copper conductor of minimum size 2.5 sq.mm. 20% spare cores shall be provided in each control/ signaling cable. All power cable shall be of 650/ 1100 V grade PVC insulated unarmored with copper conductor of appropriate size.

2.2.33 Earthing of all electric equipment shall be done as per relevant BIS, latest IE rules and statutory regulation of the Government.

No. earth points shall be made available in the machine room by Purchaser.

2.2.34 Bidder shall connect the equipment earthing to the nearest earthing grid of BNPM ( as per site conditions & availability)

2.2.35 Power, control & signal cables - Copper cables shall be preferred

It shall be the full responsibility of the bidder to carry out all the necessary documentation, drawings

**TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPM, MYSORE.– 570003.**

etc. required for obtaining statutory approvals from lift inspector / authorities

As built drawings ( 3 sets – Soft copy & Hard Copy ) along with Controller program backups ,controller software, passwords as applicable shall be provided to BNPM.

Bidder shall give necessary onsite training to BNPM personnel for proper operation & maintenance ( including the controller programming aspects ) of lift after commissioning.

Approved make of materials: All materials shall be ISI Marked / BIS approved reputed brands shall be provided All the materials shall be of the best quality from an approved manufacturer. Contractor shall obtain prior approval of the consultant / Purchaser (BNPM).

### **PAINTING**

- 3.1 General service painting – This includes structures, plate works, piping, ducting and machinery of mechanical nature (except motors, resistors, panels, switch gears etc.).
- 3.2 All parts of the elevator shall be thoroughly cleaned of all mild scale, rust and foreign materials by appropriate method of cleaning such as solvent cleaning, hand tool and power tool cleaning flame cleaning, blast cleaning etc. After that, all parts including frames, gear boxes etc., shall be sand blasted as per STANDARDS.
- 3.3 All parts inaccessible after assembly shall be painted before the assembled while paint is still wet. After erection of the elevator at site, damaged areas shall touch up with primer and paint of proper Paint of approved colour shall be applied.
- 3.4 Interior of all gear housing shall be painted with oil resistant paint after sand blasting and acid cleaning.
- 3.5 All machine pads bearing surfaces on structure or housing shall be painted with white lead.
- 3.6 Switch Board/ Control panel painting- This includes fabricated sheet metal items namely electrical control panels, switch boards, control disk, cabinets etc.
- 3.7 Mild scale, rust etc., shall be removed by pickling in a bath of dilute Sulphuric, Hydrochloric or Phosphoric acid, with or without heating, followed by thorough rinsing by fresh water to remove acid traces. Pickling in Sulphuric acid may be followed by dipping in dilute Phosphoric acid containing iron phosphate. Prior to pickling heavy deposits of oil, grease, soil and other foreign matters shall be removed by solvent cleaning.
- 3.8 The quality of paint and colour scheme of finish coats shall be as approved by the owner.

### **4.0 INSPECTION & TESTING:**

1. GENERAL: The bidder based on the broad outline inspection procedure indicated in this Section shall finalize with owner/ his consultant prior to the award of contract, the detailed procedure for inspection, testing (at factory/ site) along with the schedule of time and period of individual activities.
2. The Contractor shall submit relevant test Certificates for al electrical equipment, cables. Following are the guidelines for shop testing.
  - i. All motors to be routine tested as per IS 325-1978.
  - ii. All control panels/ MCCS shall be routine tested as per IS:8623 Part I & II- 1980. iii. Thyristor/ Rectifier panels as per IEC 146.
  - iv. Dry type power transformer as per IS 1171-1985.
3. Similar test Certificates shall be submitted in respect of items like wire ropes, chains, couplings, gears, gear boxes, rope drums, pulleys, shafts etc.

TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE **CISF QUARTERS BUILDING**  
**BNPM, MYSORE** – 570003.

4. Contractor shall give adequate notice to the owner in regard to shop testing of major items like motors, etc. in order to enable the owner/ his consultant to witness the tests if required by the owner.
5. Work shall be carried out in accordance with prevalent/ relevant standards like Indian Electricity Act, IEE rules, Lift Act, etc. **It will be the responsibility of the firm to arrange for inspection by the statutory authorities at the appropriate time, obtain necessary Certificates and handover the same to the PMC/ Client for record.**

5. **INSPECTION AT SITE:**

5.1 These tests after erection of the elevator in plant shall comprise of the following: a) The supplier's tests.

b) Acceptance tests/ performance guarantee tests.

5.2 After the elevators are erected all equipment and machinery shall be tested as required by the owner/ inspector in line with IS 4666. The elevator shall be run without load and the adjustments shall then be completed.

5.3 All tests shall be carried out in the presence of the owner/ Inspector and any corrections found necessary shall be approved by the owner/ inspector and shall be carried out with minimum of delay. The supplier shall be responsible for producing all necessary working sketches and drawings to the approval of the owner/ inspector.

5.4 The elevators after erection shall be tested as follows: i)

Performance guarantee test:

The elevators after completion of erection shall be performance tested to meet the following acceptable limits of design parameters.

SPEED: 1.0m/s for 6 passenger lift with LANDING ACCURACY within + or - 5mm

In case of unit capacities and design parameters guaranteed by the Contractor are not established during the performance guarantee testing, the owner at his discretion may reject or accept the elevator after assessing its technical suitability. The Contractor shall be given 2 months time after commissioning for rectification to achieve the necessary design parameters, beyond which the purchaser may reject.

5.5 A contract load test under the supervision of the Local Authority and in the presence of Purchaser/Consultant shall be carried out before lift is put in regular service.

The lifts shall be tested for contract speed with the full contract load & Any other tests which are required as per I.S. standards and to ensure that the lift equipment complies with the specifications and will give satisfactory operation during service

5.6 **ELECTRICAL TESTS:**

a) Visual check for adequacy & completeness of scope of supply. b) Insulation test on electrical equipment wiring.

c) Satisfactory operation of controllers, limit switches, safety devices etc. d) Correctness of all circuits and interlocks.

e) Satisfactory operation of electric lift for all motions/ stops.

5.7 It is the responsibility of the tenderer to arrange for inspection by the statutory authorities like CEIG/CEA/City Corporation etc and to obtain approval certificate before putting the lift into service. **Time of completion will be treated completed only after obtaining approval**



TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE **CISF QUARTERS BUILDING BNPM, MYSORE** – 570003.

**certificate from the appropriate statutory authority.**

5.8. The Lift shall be under the warranty of a minimum of 12 months from the date of handing over during which all the regular servicing /breakdowns are to be done with free of cost. BNPMIL will not make any extra Payment.

5.9 The equipment such as operating & indicating devices, control panel, motor, plug & sockets, limit switches, contactors, junction box, lighting fixtures, switches, etc. shall have test certificates issued by recognized independent testing Authorities.

All indigenous equipment shall conform to Indian standards and shall be certified by Indian testing agencies. All equipment (indigenous & imported) shall also have valid statutory approvals as applicable

**5.10 ACCEPTANCE TEST:**

After supplier's tests are completed, an acceptance test shall be carried out by the Owner's operator, and if accepted, the elevator shall be handed over to the owner. Operation & capacity tests will be conducted as specified in IS 4666 and as specified above. Insulation and other tests applicable to the electric lift shall be done as per relevant IS.

The date(s) for operation and capacity tests shall be set by the owner/ inspector and the supplier shall be informed of the date (s) in advance. The supplier shall be represented at the tests by a qualified engineer or erection superintendent familiar with erection and commissioning of the elevator.

TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE **CISF QUARTERS BUILDING BNPM, MYSORE** – 570003.

**Particulars of Lift Service requirement**

<b>Sr. No.</b>	<b>Particulars</b>	<b>Recommended</b>	<b>offered</b>
1	Application	Passenger, Handicap friendly	
2	Capacity	8(eight) persons	
3	Load	544 Kg	
4	Number of Lifts	1 no. (one)	
5	Speed	1.0 meters per second. (Minimum)	
6	Level	<b>G+6</b>	
7	Travel	As per drawing	
8	Servicing	Lift should serve from <b>G+6</b> Thus servicing 7 levels and 7 openings same side.	
9 a	Size of the lift car	To be given to suit to available & lift shaft.	
9 b	Entrance width and type of door	To be given (as per standard to enable to enter wheel chair) Center opening/telescopic automatic power operated	
10	Car enclosure & Door	Shall be of hairline finish stainless steel with mirror with handrail etc. Inner surface of Car door shall be Hair-line finish stainless steel with full size vision panel all as per General specification.	
11	Car floor	Anti-skid	
12	Car fittings	LED light with auto as well as manual control	
13	Drive & Machine	A.C. variable voltage variable frequency type & Gearless, Permanent Magnet 3VF - Variable Voltage & Variable Frequency Drive based for automatic operation Latest model & Energy Efficient VFD shall be opted Drive Motors - IP 55, suitable for 415 V, 3 phases, 3 wire, 50 Hz , Drive motor shall be suitable for VFD application. Approved Brands of VFD / Motors : ABB/SIEMENS/SCHNEIDER/YASKAWA/L & T/Vacon	

**TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISE QUARTERS BUILDING BNPM, MYSORE – 570003.**

		VF Regenerative (Closed Loop) 400/415 Volts (3 Phase AC)	
14	Control Operation	Elevator served and should be in simplex control with /without attendant.	
15	Safety Gear	Over speed Governor instantaneous type	
		operating on Electro Mechanical basis.	
15a	Hoist way size inmm-	as required	
15b	Hoist way door	Stainless steel hairline finish.	
16	Lift pit depth	As required – As per standard	
17	Intercom	3-way intercom system will be provided. Additionally, there should be provision to fix BNPMIL intercom to be mounted flush to car wall which will be connected to BNPMIL EPABX.	
18	Car EmergencyLight	Emergency Battery operated power supply (EBOPS) for light, alarm and a fan to be provided with electric power supply to the light in the car, when the main power supply is not available. The operation to be automatic and no need of manual intervention to be required.	
19	Load weighing Device with bypass function	To be provided which senses the load. Facility to be provided for bypassing aregistered landing call be a car loaded more than 80%	
20	Full length infra-red safety light curtain infra-red operated doors safety system.	To be provided. The Light Curtain to consist of infra-red-light beams passing between Car Door Entrances and one side of the Entrance the light source is being sensed by sensors. If an object cuts the light beams the receivers will sense and give door command to the door operating system. This is to sense the passenger movement without being getting in to physical contact of doors with human being or other materials like trolley, perambulator etc., which ensures the highest safety to the passenger and other items transported by Elevator This infra-red light curtain to operate as low as from 100 mm to a height of 2 meters, so the system can even detect the movement of child pet etc., and thus ensures complete	

TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE **CISF QUARTERS BUILDING BNPM, MYSORE** – 570003.

		safety to users.	
21	Fireman Drive	Provision for Fireman drive to be made to bring the car to the main floor immediately after the fire switch is operated. Thereafter the car is for operation by the rescue person. All landing calls are ignored. Lift answers one car call at a time. The rescue person controls opening and closing of doors at a floor. Returns to normal when fire switch is opened. Fireman switch Drive to be provided to ground all the lifts.	
	Illumination	1.Lift Shaft Lighting , Lift Machine room , Lift Car lighting shall be included in the scope of bidder only 2.All lamps & luminaire shall be LED fittings only 3. At least one Emergency light fitting provided shall be provided in the Lift Shaft, Machine room & Car ( Emergency light units (ELU) as applicable shall be provided ) 4. Hand bulb/Shaft bulb shall be provided on the top of the car for shaft inspection & maintenance purpose 5. Light fitting & single phase socket shall be provided inside Electrical & Control panels 6. ELCB shall be provided for all the lighting circuits with earthing and 3 phase cabling	
	CAR INSIDE	Operating Devices - UP/DOWN Push Buttons , Door Open /Close buttons Number push buttons for each floor landing Alarm & Emergency Stop Push buttons UP/DOWN direction travel indication Overload warning indicator with alarm Intercom Telephone Set is required  Near Floor Landing - Operating Devices UP/DOWN Push button Call Registered indication shall be included UP/DOWN direction travel indication Out of order / Maintenance indicator	

**TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPM, MYSORE – 570003.**

	Cables	All Cables ( Power / Control / Signal / CCTV/ CAT-6 ethernet cables etc.) shall be travelling grade lift duty cables only Copper cables shall be preferred CAT-6 cables are preferred for necessary LAN connectivity Technical specifications shall be as per IS 4289 as applicable	
	Safety Aspects	Buffer, rope & counterweight, Guide rails, Brake for fail to safe, Over speed governor & safety gear, Overload protection device & alarm, Short Circuit , Earth fault protection , Phase failure & phase reversal protection for motor, Retiring Cam. Earthing of the equipment	
23	Automatic rescue device:	To bring the car to the nearest landing in case of power failure and also System failure.	
24	Battery operated emergency alarm bell.	To be provided	
25	Stainless steel signal fixtures:	To be provided	
26	Individual light and fan on/off switches	To enable the passenger, use the light and fan switches to his/her choice.	
27	Cooling fan for lift motor	To keep the motor in a cool condition against heating up of motor coil is increased thereby	
28	Cooling fan for lift controller	To keep all electronic components in a cool condition, all safety logic circuits are protected Lives of electronic components are increased.	
29	Door open/door close functions in car	Door open/door close functions to be provided in the car to deal with the emergency situations and to have a better operation by the attendant.	
30	Direction and position indicator in car and landings	Direction and position indicator to be provide in car and Landings.	
31	Home floor parking selection	Lift will stay after service at the landing it last arrived. If required by client, contractor to make Home parking arrangement at the designated floor.	

**TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPM, MYSORE – 570003.**

32	Main entrance floor selection	This is the floor at which the fireman switch and alarm bell will be fixed. So that in case of emergency the lift can be taken control by the firemen at that floor.	
33	Variable door opening time.	The opening time of the car door and landing door can be varied according to the requirement.	
34	Full collective logic	Full collective control system to be provided to facilitate the optimum function of the elevator. Here the lift will accept the car and landing calls in both directions	
35	Inspection Clause	Contractor has to arrange inspection of factory for persons at their own cost.	
36	Approvals	CEIG approval & all statutory/Compliance related approvals & Liasioning shall be included in the scope of bidder only	

**TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPM, MYSORE – 570003.**

**Note:**

1. The Contractor (Lift Vendor) has to arrange at their own cost including necessary scaffolding, supply, fabricate and erect in position structural steel required for support of machine, brackets for guide rails, fascia plates at all landings etc., including three coats of anti-corrosive paint of approved make. Client shall arrange a civil contractor for connected Civil works. The Civil works such as cutting of holes, chases etc., in brick work, concrete etc., The vender has to arrange at their own cost including necessary scaffolding in/out of lift wells, floors on partitions together and making good holes for fixing brackets in lift walls, grouting of all bolts, sills, brackets / control board/button boxes, limit switches etc., all in position for all lifts together. The Contractor shall supervise the work executed by civil contractor. Approved Drawings related to these works shall be submitted based on which the civil contractor shall execute the job under the supervision of Lift Vendor.
2. Provision shall also be made available in the controller and wherever necessary for the lift(s) to directly travel to ground floor on any signal from Fire Alarm Control Panel having led to lift machine room, automatically, ignoring direction of travel and other pending commands as per special condition of the Bid.
3. The offer shall include identification of Fireman's Lift, having break glass panel and other specific functional requirement. Requirements indicated in the National Building Code of India (Equivalent to BS) in respect of Fire Protection requirements of lifts (Clause 'D-1.5' – Latest Issue) shall be fully complied with in respect of Design, Manufacturing and Erection of the Lifts.
4. Contractor shall provide full set of tools required for maintenance of lifts in the Lift Machine Room.
5. Notice required from the statutory authority shall be obtained.
6. Cost Includes; Factory inspection is to be arranged for two persons.

QAP for factory inspection may be submitted with tender document.

**OTHER SPECIAL CONDITIONS FOR  
TENDER**

**A. FOR LIFTS.**

1) The lift shall be suitable / compatible for integration with fire alarm system signals and capable of entering into 'Emergency Fire Mode Service' by operation of break glass panel of the Fireman's lift.

"FIRE MAN SWITCH" shall be provided to ground the lifts and use them as "FIRE LIFT" as per local statutory regulation.

TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPM, MYSORE – 570003.

- 2) The doors of Lift car and Hoist way landing openings shall have safety device of both Mechanical safety edge protective system and infrared curtain Electronic Door detector device) to retract door operation in case of intrusion if any.
- 3) Lift car shall have in built load measuring (weighing) device required for adjustment of starting torque to keep the car jerk free at start apart from sensing overload and stopping movement of the car in that load condition by keeping its door open and sounding the buzzer in the car or bypassing further hall calls if the car is loaded to designed capacity.
- 4) The techniques of Variable Voltage Variable frequency type drive shall be of to limit motor starting current to less than 1.8 times the nominal motor current.
- 5) The operation control shall have device for car landing at floor level (s) without creeping speed while levelling which accuracy shall be within  $\pm 3$  mm
- 6) Better quality of installation shall be ensured preferably by adopting scaffold less erection.
- 7) The Lift control system shall also have the following features in addition to those otherwise specified in the Bid.
  - a. Bypass load function to cancel hall calls in the intermediate floors in case lift is nearly to its capacity temporarily without jeopardizing the call registered till the floor is served.
  - b. Automatic cancellation of down calls during up-peak traffic service of the lifts.
  - c. Redundancy & reliability for efficient functioning of Lifts of a group in case of any one or more lift(s) is / are out of operation due to maintenance or otherwise without sacrificing any features of the functioning lifts.
  - d. Flashing of hall lantern to indicate arrival of a particular Lift car at landing.
  - e. Flexible choice of multiple parking zones.
  - f. Cancellation of false calls by counting stops through photocell in the lift door.

8. Door Open Time:

The door opening time at any floor shall be capable of being set at site depending on the site conditions. Also, the door open time at the main floor can be set differently to suit the need.

9. Special Function floors:

The system shall have software facility to select or designate different type of floors depending on the requirement of the building to match the lift service effective under different conditions.





TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPM, MYSORE – 570003.

**GENERAL / DETAILED SPECIFICATIONS FOR LIFT**

1. a) Drawings:

The work shall be proceeded with the preparation of the general arrangement drawings based on the site/building plans handed over for the purpose and submission of the same for approval of the Architects according to the time Schedule specified. Any doubt on dimensions shall be got cleared by verifying at site/building under construction.

Detailed drawings of all items/components, which are to be provided for in the construction by other agencies such as BNPMIL Mysore for Civil and associated works or Electrical Contractor, shall also be furnished well ahead of the requirement. Approvals of the drawings shall be sought from the Project Engineer before handing over to the agencies for execution.

b) Project information / data:

Design ambient for electrical equipment is

40°C.

c) Technical:

i) Variations in Power supply:

All equipment's shall be capable of working efficiently under conditions of Voltage and frequency variations. The range of variation is as below: Voltage  $\pm 10\%$  Frequency:  $\pm 5\%$  Combined Voltage & Frequency:  $\pm 10\%$

2. Lifts

3. a) Lift

Car

(i) Car

Frame:

The Car frame shall consist of suitable Structural shape, properly braced and securely fastened together.

(ii) Car Enclosure:

Car enclosure shall be of Stainless Steel of suitable thickness which shall be mentioned.

(iii) Car Platform:

TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPM, MYSORE – 570003.

The Lift Car Platform shall consist of an outside metal frame, which will have steel sheet / Aluminum cheered plate flooring. The steel sheet flooring shall be covered with Vynyl flooring.

The platform shall rest on rubber pads supported on an ancillary steel frame fastened to the car frame, thus forming an isolated cushion between the Car and the Steel Car frame.

(iv) Car Door:

The Car entrance shall be provided with a Center opening flush type for 5 passenger lift and Center/side opening flush type, horizontal sliding door which shall be hung on rubber-tired sheave hangers with a steel track and guided at the bottom by non-metallic shoes sliding in a threshold groove. It shall also be of solid type with fire resistance of at least one hour. The inside surface of the Car door shall be of hairline finish stainless steel.

(v) Car Fittings:

The lift Car shall be provided with a LED, battery operated Emergency light and a fan/blower.

Lift Operation:

The type of operation offered shall be as per Clause 2.42.3 of I.S. 1860 with one button in Car for each landing level served and up and down buttons at the intermediate landings and a single button at such terminal landing.

All stops registered by the momentary pressure of the Car buttons shall be made in the order in which the landings are reached after the buttons have been pressed, irrespective of the sequence in which calls were registered.

The type of operation offered shall also cover the provision for operation with attendant. Provision for manual raising or lowering of lift in case of emergency shall also be made.

A home landing shall be established at the main floor to which the Car shall automatically return when all calls have been cleared and park.

Provision shall also be made in the controller and wherever necessary for the lift(s) to directly travel to ground floor on any signal from Fire Alarm Control panel having led to controller, automatically, ignoring direction of travel and other pending commands as per special condition of the Bid.

c) Car Operating Panel:

One number car-operating panel shall be provided.

The Car operating panel shall be flush mounted in the Car enclosure and fitted with the following: -

- i. A BNPMIL of buttons including braille buttons to correspond to the various landing levels served.
- ii. An emergency stop switch for stopping the Car independently of the regular operating service.

TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPM, MYSORE – 570003.

iii. An alarm button connected to an alarm bell located at the main floor landing outside of and adjacent to the hoist way.

iv. A 'Door Close' button and a 'Door Open' button shall be provided. The door open button shall be capable of reversing the doors while closing.

v. The panel shall also include a non-stop switch for by passing landing calls, which shall however remain registered till they are answered.

vi. The following provision shall be covered in the operating panel for use of the attendant.

1) A buzzer for notifying the attendant when an up trip should be made in answer to hall bells. 2) Key operating switch for cutting in and out the additional equipment for "WITH ATTENDANT OPERATION".

3) Up and down light jewels for indicating the direction of the Car, set to travel.

vii) A plainly marked push button shall be provided in the Car operating panel with wiring connected to an emergency alarm bell.

viii) The following shall also be included in the car-operating panel. i) 'up' push button, (ii) 'Down' push button, (iii) Braille plate on the side of each button.

ix) The following operating devices shall be included.

In the machine room/control room – 'UP' push button, 'DOWN' push button, 'STOP' push button, Handcranking device, slow speed operation.

On the top of the car: 'UP' push button, 'DOWN' push button, 'STOP' push button (Emergency PUSH to lock), 230 V, 1 Phase Receptacle.

x) The following indicating devices shall be included.

In the landing: 'UP' direction of travel, 'DOWN' direction of travel, Location of the position indicator, call registered 'UP' indicator, call registered 'DOWN' indicator, Lift out of order / under maintenance.

xi) The following car accessories shall also include

the following. a Hand rail

b. Car Operating Panel (COP)

(c) Car Position Indicators:

A LCD/TFT Digital Car position indicators shall be provided with Stainless Steel face plate in each elevator Car which will indicate the landing at which the Car is stopping or passing.

Illuminating direction arrows to indicate the direction of travel shall also be provided along

TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPM, MYSORE – 570003.

with Car position indicator referred above.

(e) Call Registered Lights:

Each hall button faceplate in Stainless Steel shall be provided with registered lights, which shall illuminate when Corresponding button in the faceplate is momentarily pressed (Luminous buttons) and remain illuminated until call is answered.

(f) Hall Position Indicator:

A Seven Segment Digital position indicator shall be provided on side of entrances at all landings indicating the position of the Car in the hoist way at all times.

(g) Hoist way Entrance:

Centre opening/telescopic Steel doors with provision for emergency key opening at all landings shall be provided. The door shall be of solid type with fire resistance of at least one hour. The outside surface of Hoist way door to be hair line finish Stainless Steel as specifically provided for.

(h) Alarm Bell:

An emergency alarm bell including wiring shall be provided at a location adjacent to the hoist way on inside at ground floor landings and at the top of the car.

(i) Automatic Terminal Stops:

The elevator shall be equipped with an automatic stopping device arranged to bring the Car to a stop at the terminal landings independent of the regular operating device in the Car.

The final limit switches shall be provided in the hoist way separated by the Car and arranged to stop the Car and prevent normal operation should it travel beyond the zone of the normal stopping device.

(j) Fireman's Switch:

A Fireman's switch of two-button housed in a glass fronted box adjacent to the lift shall be provided at the entrance level in Ground Floor.

The switch in 'On' condition shall not cause landing call-points operative.

(k) Car and Hoist Way Door Operation:

Doors on the Car and at each hoist way landing (Side opening / Centre opening sliding doors) shall be operated quietly and smoothly by an Electric Operator which shall open the Car door and hoist way door simultaneously. All electric contact for the Car door shall be provided which shall prevent elevator

**TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPMIL CAMPUS MYSORE. – 570003.**

movement away from the landing unless the door is in the closed condition.

Each hoist way door shall be equipped with a positive electro mechanical interlock and auxiliary door closing device so that the elevator can be operated only after interlock circuit is established. In case of power interruption or failure of the operator, it shall be possible to open the doors manually from within the Car.

**(l) Door Safety:**

The Car and landing doors shall be provided with mechanical as well as electric / electronic safety device (Infra-red) to instantly stop the closing of the doors on sensing an obstruction and to retract.

A protective device, effective along the front edge of the car door to its full height shall be provided in such a way that doors of the car and hoist way shall return to their position on touch of a person or object while the Car door is on move for closing. The doors shall remain open until the expiration of a pre-determined interval and then close automatically.

**(m) Door Hangers and Tracks:**

Sheave type hangers and tracks at each hoist way entrance shall be provided with complete Sheaves and rollers. They shall be of Steel. Adjustable ball bearing rollers shall take up thrust of the doors.

An air cord drive or suitable arrangements shall be provided for transmission of motion from one door to the other.

**(n) Ropes if applicable (Not applicable in case of belts)**

The Car hoist ropes shall be of traction steel of suitable size, construction, and number to ensure the proper operation of the elevator and give satisfactory wearing qualities.

Governor ropes shall be of Steel. All ropes shall consist of at least Six strands, wound around a hemp core center and shall be specially designed and constructed for elevator application. The minimum factor of safety in rope capacity shall be 10.

**(o) Safety Device and Governor:**

The safety device shall be of friction type safety gear and mounted on the bottom members of the Car frame or otherwise as per manufacturers specification and shall be operated by an over speed governor located over the hoist way. The safety device shall be provided to stop the Car whenever excessive descending speed is attained with means to cut off power from the motor and apply the brake prior to application of the safety device.

**(p) Guide Rails & Fastenings:**

Pinned Steel "T" shape elevator guide rails with ends tongued and grooved shall be provided for the car and counter weight. They shall be erected plumb and fastened securely to the hoist way framing by heavy steel brackets. The guide rails shall be connected by steel splice plates. All such ancillary steel structures shall be included in the quoted rate.

**(q) Counterweights:**

The counter weights shall consist of iron weights contained in Structural Steel Frame and shall be

**TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPMIL CAMPUS MYSORE.– 570003.**

equal to the weight of the complete Elevator Car plus 40% to 50% of the Contract load.

**(r) Buffers:**

Buffers shall be provided for car and Counterweight including required pipe struts of suitable type for speed more than 1.8 m/ s. Spring Buffer for goods elevator and machine room less elevator. The stroke of the buffer shall be as per the applicable IS standards.

**(s) Machine:**

Machine shall be of gearless.

**(t) Motor:**

Motor shall be of A.C. Type having variable Voltage Variable frequency motion control system, specially designed for lift duty and of design such that there should be proper lubrication possible if required.

The motor shall be Class-F insulated and shall be sized for 125% of contract load.

An alternative method of motor and / or motor control which gives better performance, proven system may also be submitted by Bidder along with Bid.

**(v) Levelling Accuracy:  $\pm 3$  mm at all load condition. (w) Electric Wiring:**

Insulated wiring with conduit or tubing together with necessary fittings, metal boxes, troughs and ducts shall be provided.

Separate conduits shall be used for carrying conductors of different voltage ratings. In all, International standards and Rules of B.S /Indian Electricity rules shall be followed. Copper wire of 1100 volts rating only shall be used.

**(x) Power Supply:**

400V, 3 Phase, 4 Wire, 50 Hertz Alternate Current and Single Phase 230V, 50 Hertz Alternating Current will be made available at a convenient point in the ground floor on a distribution board arranged along with the main work. Lift shall operate under voltage fluctuation of + 10% (i.e. between 360 to 440V)

**(y) Steelwork & Civil Works:**

All Structural Steel fabrication, supply and delivery to site, erecting it in place, including painting, making necessary holes, chases in concrete masonry etc., aligning and grouting steel members in Cement Concrete of approved proportion including curing shall be done unless otherwise considered separately.

The Structural Steel work shall cover all items necessary for efficient and safe functioning of the lifts such as Machine beams, hoisting beams, guide rails, strut angles at every landing, rail brackets, bearing plates, hitch beams, stretchers, separators, buffer supports, cleats, bolts, etc. All guide rail brackets shall be provided with adequate supports. No claim for extra payment shall be admitted on account of missing out any of these aspects while quoting for the work.

Also, all Civil works and necessary scaffolding for the installations and commissioning of the lifts such as beams, pedestal for lift buffer springs grouting of all the pockets, holes etc., including fixing

**TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPMIL CAMPUS MYSORE. – 570003.**

in position of indicator call bell and other boxes, grouting of sill and patching around the entrance etc., shall also be covered in the quoted price unless otherwise considered separately. Making good of cutting of walls etc. and rectification of repair works shall be carried out using specifically fire retarding material of approved make.

Suitable and adequate Scaffolding required for the erection of the lift(s) and hoisting of all machinery and equipment to the required heights shall be arranged by the Client.

**(z) Work Co-ordination:**

The Work shall be coordinated based on the approved working drawings well in advance with Architects, Consultant, Civil Contractor, and Electrical Contractor in all respect for satisfactory installation of lifts including location of lift wells and supporting structures etc.

Safe storage and protection of all equipment and accessories shall be made at no extra cost and loss or damage of the equipment or the accessories until handing over of the lift(s) shall be made good without claiming any extra.

**OTHER PARAMETER FOR LIFTS:**

**1. GENERAL:**

- a) The manufacture, supply and installation of Lifts shall be complete in all respect in a first class workmen like manner and shall cover all work including Structural Steel work necessary for the supporting structures for the Lift machine room and other minor Civil works such as scaffolding etc., required for installation and materials, all complying the requirement of local body if any, and in accordance with the I.S. specifications I.S.1860, 2365, 14665, 3534, 9878 and 4666 and I.S 4951-1968. (Re-affirmed – 1991) and fire protection requirement as per National Building Code of India.
- b) Electrical works shall be in accordance with the CPWD General Specifications for ELECTRICAL WORKS - Part-III (Lifts & Escalators) – latest revision / amendment
- c) Quality Assurance Plan (QAP) in respect of Lift shall be submitted before commencement of work for approval of the Architects/Project Engineer.

**2. PARTICULAR:**

- (a) Salient features of the Equipment provision as to manufacture, furnishing, finish etc. shall be highlighted with reference to the material input and operational supremacy.
- (b) Necessary working drawings showing the general arrangements of the equipment etc. shall be furnished. The drawing shall also detail out all items/components, which shall have to be provided by other agencies such as the Main Contractor for Civil and Associated works or Electrical Contractor during the execution of the main work/installation.





**TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPMIL CAMPUS MYSORE. – 570003.**

(c) The materials and workmanship of the Lifts and its installations shall be guaranteed and the guarantee shall cover making good of any defects, not due to any ordinary wear and tear or improper use and care, which may develop within One year from the date of handing over of installations duly tested and commissioned. Test certificates of the material used on site for installation and operation of the lift shall be submitted.

(d) The Lifts installations shall be maintained for a period of 12 (Twelve) months commencing from the date, the Elevator equipment's are taken over to use and the maintenance shall include periodical lubrication of the equipment and adjustment thereof, if any, under supervision and direction of Competent Personnel and replacement of parts that become necessary due to normal wear and tear during the guarantee period. All Operation / Maintenance shall be performed during regular hours of regular working days.

(e) The Lift service particular and General Specification/Condition appended shall be adhered to in all respect, except for specific change contemplated otherwise in the offer.

(f) The equipment supplied and erected shall be in accordance to IS-4666/1968, 1860/1968 & 1980, 3534/1979, I.S. 4591-1968. (Re-affirmed – 1991).

(g) The local statutory Lift Rules for Lift Control as applicable shall be complied with, no extra payments shall be considered either due to escalation or amendments / modifications to local Act / Rules issued during the contract period.

(h) Bidder / Contractor in co-ordination with client shall be responsible to obtain necessary License from the Electrical / Lift Inspectorate of Government of Karnataka for installation / operation of Lifts before handing over of the installation(s) by taking timely action in submission of prescribed application form therefor along with documents like completion drawing etc., duly making payment of required statutory fees / charges in the manner specified by the Inspectorate on behalf of the Employer and further follow up action. Payment for this special service shall be made on Lump sum basis as covered in the Schedule of quantities for both Lift installations separately.

The lump sum amount shall however be exclusive of statutory fees /charges payable to Inspectorate which shall be reimbursed by the Employer as per actual on evidence of payment.

**3. Insurance: -**

The work shall have adequate insurance cover as specified by the employer and the employer shall be kept indemnified from all claims unless otherwise provided for.

**4. Test at Site: -**

Tests on site shall be carried out as per I.S. 4666 Clause 24.3 or equivalent to BS before the lift(s) is/are put into normal use.

**5. Approval of Installations and Completion Certificate: -**

Approval/Completion Certificate from the Chief Electrical Inspector to Government for installation and Commissioning of Lifts shall be obtained and made available to the Employer be-





**TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPMIL CAMPUS MYSORE. – 570003.**

fore handing over Lifts at no extra cost. Fees payable to the authorities shall however be made by the employer.

**6. Servicing: -**

The servicing facilities shall be made available at Mysore for maintenance of Lift(s) during guarantee period of 24(Twenty-four) months, free of cost and thereafter under annual service contract.

**SAFETY CODE**

Suitable scaffolds shall be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except in the case of short duration work, which can be done safely from ladders. When a ladder is used, it shall be of rigid construction made either of good quality wood or steel. The steps shall have a minimum width of 450 mm and a maximum rise of 300 mm. Suitable hand holds of good quality wood or steel shall be provided and the ladder shall be given an inclination not steeper than  $\frac{1}{4}$  to 1 ( $\frac{1}{4}$  horizontal and 1 vertical).

Scaffolding or staging more than 4 m. above the ground floor, swung or suspended from an overhead support or erected with sanitary support shall have a guard rail properly bolted, braced or otherwise secured, at least 1 m. above the floor or platform of such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.

Working platforms, gangways and stairways shall be so constructed that they do not sag unduly or unequally and if the height of the platform, gangway or stairway is more than 4 m. above ground level or floor level, they shall be closely boarded and shall have adequate width and be suitably fenced as described in (ii) above

Every opening in the floor of a building or in a working platform with suitable means to prevent the fall of persons or materials or railing whose minimum height shall be 1.00m. Whenever there are open excavations in ground, they shall be fenced off by suitable railing and danger signals installed at night so as to prevent persons slipping into the excavations.

Safe means of access shall be provided to all working places Every ladder shall be securely fixed. No portable single ladder shall be over 9 m. in length while the width between side rails in rung ladder shall in no case, be less than 290 mm, for ladder up to and including 3 m. in length. For longer ladders this width shall be increased at least 20 mm for each additional meter of length.

A sketch of the ladders and scaffolds proposed to be used shall be prepared and approval of the Engineer obtained prior to Supply & Installation.

**Other Safety Measures**



**TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPMIL CAMPUS MYSORE. – 570003.**

All personnel of the contractor working within the plant site shall be provided with safety helmets. All welders shall wear welding goggles while doing welding work and all metal workers shall be provided with safety gloves. Persons employed on metal cutting and grinding shall wear safety glasses.

Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites of work shall be so stacked or placed as to cause danger or inconvenience to any person or the public.

### **Personal Safety Equipments**

xii) All necessary personal safety equipment like helmets, safety belts etc as considered adequate by the Architect should be kept available for the use of the person employed on the site and maintained in a condition suitable for immediate use, and the contractor should take adequate steps to ensure proper use of equipment by those concerned.

Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles. Those engaged in white washing and mixing or stacking of cement bags or any materials, which are injurious to the eyes, shall be provided with protective goggles. Those engaged in welding works shall be provided with welder's protective eyesight lids. Stonebreakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals. When workers are employed in sewers and manholes, which are in use, the contractor shall ensure that the manhole covers are opened and are ventilated at least for an hour before the workers are allowed to get into manholes and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public.

The contractor shall not employ men below the age of 18 years. Women of any age shall not be engaged for the work of painting with products containing lead in any form. Whenever men above the age of 18 years are employed on the work of lead painting the following precautions should be taken. No paint containing lead or lead products shall be used except in the form of paste or ready-made paint. Suitable facemasks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint dry rubbed and scraped. Overalls shall be supplied by the contractor to the workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of work.

When the work is done near any public place where there is risk of accidents all necessary equipment's should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision should be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.

### **Hoisting Machines**

xiii) Use of hoisting machines and tackle including their attachments anchorage and supports shall conform to the following standards or conditions.

**TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPMIL CAMPUS MYSORE.– 570003.**

1. (a) These shall be of good mechanical constructions, sound materials and adequate strength and free from patent defect and shall be kept in good working condition with necessary preventive maintenance

(b) Every rope used in hoisting or lowering materials or as means of suspension shall be of durable quality and adequate strength and free from patent defects.

c. Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years shall be anchorage of any hoisting machine including any scaffolding without signals to operator

d. In case of every hoisting machine and of every chain ring hook, shackle shovel and pulley block used in hoisting or as means of suspension the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load, each safe working load and the conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.

e. In case of department machines, the safe working load shall be notified by the Engineer. As regards contractor's machines, the contractor shall notify the safe working load of the machine to the Engineer whenever he brings any machinery to site of work and get it verified by the Engineer concerned.

xiv) Motors, gearing transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguards, hoisting appliances should be provided with such means as will reduced to minimum of risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations, which are already energized, insulating mats, wearing apparel such as gloves, sleeves and boots as may be necessary, should be provided. The workers should not wear any rings, watches and carry keys or other materials, which are good conductors of electricity.

All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided near the place of work.

These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place at work spot. The person responsible for compliance of the

xv) Safety code shall be named therein by the contractor.

xv) To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangements made by the contractor shall be open to inspection by the Labour Officer, Engineers of the Department or their representatives.

xvi) Notwithstanding the above clause from (i) to (xv), there is nothing in these to attempt the contractor from the operation of any other Act or Rule in force in the Republic of India



TENDER FOR DESIGN, MANUFACTURING, SUPPLYING, INSTALLATION, TESTING & COMMISSIONING OF TWO NUMBER 8 PASSENGER ELEVATOR IN THE CISF QUARTERS BUILDING BNPMIL CAMPUS MYSORE.– 570003.

Technical Deviation Statement

Sl.No	Item No of Bid Document	Page No.	Brief Description of items as required in Bid Specification	Nature deviation Reason as to.	Why Bid Specification cannot met
1	2	3	4	5	6

Witness

Signature of BIDDER

