

**LADY HARDINGE MEDICAL COLLEGE,
NEW DELHI**

e-Tender

for

**Execution including Supply, Installation, Testing & Commissioning of
LAUNDRY for Lady Hardinge Medical College, New Delhi**

VOLUME – IV

Technical Specification

October, 2022



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Tender No. HSCC/SES/LAUNDRY/LHMC/2022

TECHNICAL SPECIFICATION OF MECHANISED LAUNDRY ON TURNKEY BASIS WITH DEFECT LIABILITY PERIOD

SCOPE OF WORK:

The scope of work covered under this package comprises of supply, installation, testing and commissioning on turnkey basis for the Hospital including all equipments, Boiler and accessories and auxiliary items in accordance with the specifications, bill of quantities and drawings and handover Laundry equipment to the client in satisfactory working condition including training and providing of free spares and service during Defect Liability Period.

1. Sluicing machine with automatic dosing- capacity minimum 25 kg
Electrically heated
 - a) To wash the infected and soiled clothes received from the wards, ICU's and OT's.
 - b) Machine should be fully automatic.
 - c) Basket volume minimum 250 litres. Washer extractor with soft mount type with loading capacity of 25 kg dry weight having G force of over 200 G.
 - d) Robust spring suspension with shock absorbers.
 - e) The machine should be electric heated with all wetted parts are SS304 stainless steel construction with capability of automatic washing, rinsing and extraction.
 - f) The machine needs to be single motor VFD driven with microprocessor control, Touch Screen Control, Built in vacuum Breaker, Single Motor Drive.
 - g) Machines should be energy efficient with low water, chemical steam and electricity consumption, minimum 5 External liquid supply connections.
 - h) The machines should come with all necessary safety features.
 - i) The equipment should be either BIS /USFDA /EUROPEAN CE certified with 4 digit no which can be verified on either USFDA or EUROPEAN CE website.

2. Barrier Washer Extractor - For washing cleaning and extraction.
 - a) Capacity -100kg
 - b) Electric Heated & Steam Heated Dual mode
 - c) Doors- Two opposed doors, loading door on dirty side and unloading door on clean side
 - d) Positioning of drum doors with regard to tub doors is automatic
 - e) High spin and soft mount type. The machine shall be of "soft mount" type
 - f) Heavy-duty machine with complete SS Body frame for better life with microprocessor control with touch display 7"inch display with minimum 25 preset programmes with wash control management software for better traceability and efficiency of the machine, four-compartment automatic-flush detergent supply box, one frequency controlled motor, programmable microprocessor
 - g) Machine should have dual display at dirty and clean side for proper control & monitoring. Construction-material Complete SS 304 frame inner drums, outer drums, door and outer body
 - h) Intelligent Weighing system should be inbuilt in the machine for better load capacity and savings for chemical and water savings

- i) Machine Micro-processor: The machine should have microprocessor control with display with possibility of programming along with export and import program through USB memory along with management software. 8 signals for automatic liquid dosing
- j) Detergent supply: The machines shall be available for use with powder or liquid supplies, manual fed or automatic liquid supply via external pumps. No conversion between powder or liquid shall be needed. The manual dispenser shall have four compartments accessible from the front and the liquid connections from the rear
- k) Out of balance detection: The out of balance shall be determined electronically and based on the out of balance, the machine shall be able to determine the maximum allowable speed for extraction up to 325 G
- l) Water and drain: The machine shall be provided with three water inlets (Cold/Hot, soft water). The machine shall be provided with a water operated drain valve without any electrical parts for opening/closing
- m) Machine should be fully programmable with Wet Cleaning mechanism for delicate garments. Should have complete traceability data and WIFI Control with special technical menu and statistics, alarms, auto test & Data recovery for technical maintenance
- n) Electrical requirements: The machine shall be Dual Model Steam & electric heated
- o) Dispenser - 4 compartment detergent dispensers
- p) Door Dimensions- 640 x 515 mm
- q) Drum Volume – 900 Litres (Minimum)
- r) Drum Diameter -1050 mm
- s) Depth Drum-1032 mm Ø (Minimum)
- t) Drum Compartments -2
- u) Drum Opening Dimensions -900 x 500 mm
- v) Height Base door-960 mm
- w) Final Extract - More than 750 rpm or more
- x) G-Force - 325 G or more
- y) Machine should have dual mode for Electric and Steam heated
- z) Maximum Electric Load – 75 kw
- aa) Electric supply - 415V, 3Ø, AC, 50hz
- bb) Dimensions -Width-1677mm, Depth-1344mm, Height-1960 mm
- cc) Certification- The equipment should be either BIS/ USFDA or EUROPEAN CE certified with 4 digit no. which can be verified on either USFDA or EUROPEAN CE website.

3. Barrier Washer Extractor- For washing cleaning and extraction.

- a) Capacity -50 kg.
- b) Electric Heated & Steam Heated Dual mode.
- c) Door- Two opposed door, loading door on dirty side and unloading door on clean side.
- d) Positioning of drum doors with regard to tub doors is automatic, high spin and soft mount type, The machine shall be of “soft mount ” type.
- e) Heavy-duty machine with complete SS Body frame for better life with microprocessor control with touch display with 7”inch display with minimum 25 preset programmes with wash control management software for better traceability and efficiency of the machine
- f) Four-compartment automatic-flush detergent supply box, one frequency controlled motor, programmable microprocessor.
- g) Machine should have dual display at dirty and clean side for proper control & monitoring
- h) Construction-material complete SS 304 frame inner drums, outer drums ,door and outer Body

- i) Intelligent Weighing system should be inbuilt in the machine for better load capacity and savings for chemical and water savings.
- j) Machine Microprocessor : The machine should have microprocessor control with display with possibility of programming along with export and import program through USB memory along with management software. 8 signals for automatic liquid dosing.
- k) Detergent supply: The machines shall be available for use with powder or liquid supplies, manual fed or automatic liquid supply via external pumps. No conversion between powder or liquid shall be needed. The manual dispenser shall have four compartments accessible from the front and the liquid connections from the rear.
- l) Out of balance detection: The out of balance shall be determined electronically and based on the out of balance, the machine shall be able to determine the maximum allowable speed for extraction up to 375 G.
- m) Water and drain: The machine shall be provided with three water inlets (Cold/Hot, soft water). The machine shall be provided with a water operated drain valve without any electrical parts for opening/closing.
- n) Machine should be fully programmable with Wet Cleaning mechanism for delicate garments. Should have complete Traceability data and WIFI Control with special technical menu and statistics, alarms, auto-test & Data recovery for technical maintenance.
- o) Electrical requirements: The machine shall be electric heated.
- p) Dispenser - 4 compartment detergent dispenser
- q) Door Dimensions: 640 x 515 mm
- r) Drum Volume :489 Litres
- s) Drum Diameter – 800 mm Ø (Minimum)
- t) Depth Drum-950 mm Ø (Minimum)
- u) Drum Compartment :1
- v) Drum Opening Dimensions -900 x 500 mm
- w) Height Base door-800mm
- x) Final Extract - More than 900 RPM or more
- y) G-Force - 375 G or more
- z) Machine should have dual mode for Electric and Steam heated
- aa) Maximum Electric Load – 41.5 kw
- bb) Electric supply - 415V, 3Ø, AC, 50hz
- cc) Dimensions -Length-1653mm, Depth-1098, Height-1577 mm
- dd) Certification- The equipment should be either BIS/ USFDA or EUROPEAN CE certified with 4-digit no. which can be verified on either USFDA or EUROPEAN CE website.

4. Drying Tumbler

- a) Capacity – 50 kg Gas Heated
- b) Total Min capacity to dry 90-95 kg per hour
- c) Minimum Fully Programmable Touch Plus Control Processor (TP2) with 7” touchscreen.
- d) Stainless steel drum.
- e) Total Flow: Optimized axial-radial airflow.
- f) Drum with stamped perforations to guarantee the gentle treatment of fabrics.
- g) Lint filter at the bottom, more ergonomic, larger and improved airflow.
- h) Automatic reverse rotation of the drum.
- i) Frequency inverter for smoother operation.

- j) Double-glazed door with a large opening.
- k) Anti-wrinkle system.
- l) End of cycle tone.
- m) Emergency stop button and security micro magnet to stop operation.
- n) Fire Kare System (Integrated fire prevention system).
- o) Pulley and Poly-V belt transmission system with the drum supported on wheels.
- p) Heavy duty, Front Loading, Cool down Feature
- q) Microprocessor controlled with 10 preset programmes
- r) The dryer should be with temperature control system.
- s) Control – Microprocessor with touch screen 7” Display adjustable parameters such as temperature, programme and cool down time. And also the feature to control the moisture control in the dryer along with 10 preset programmes.
- t) Touch Panel Display of Temperature and drying time
- u) Time Controller- programmable time and temperature
- v) Flow system- Machine should have flow system in such a way that re circulation system reintroduces the expelled hot air inside the drum
- w) Humidity Sensor with intelligent drying and cool down at end of cycle.
- x) Door opening should be with double glass for better efficiency it should be large for easy loading and unloading
- y) Inner Drum–Should be made of Stainless steel AISI-304 with reversing drum feature and the drum should be perforated with stamped holes axially and radially to provide soft tissue treatment for garments.
- z) Insulated panels for complete thermal insulation of the machine for better savings.
- aa) Integrated fire extinguishing system to provide maximum safety and immediate activation of the system In case of fire inside the dryer basket.
- bb) Humidity sensor with intelligent drying feature for the continuous measurement for the garments in the cycle to prevent over drying and thus saving energy and time
- cc) Safety features: The tumble dryer should be equipped with overheating protection and a temperature sensor that turns off the heat if the airflow is clogged.
- dd) Installation: The tumble dryer should be having design for quick and simple installation by using the adjustable leveling feet. Only one external connection for electricity, gas, steam and exhaust should be required.
- ee) Door Lock: The dryer should have a safety function or feature, which means the dryer should stops in case the door is opened during operation.
- ff) Door Opening - 800 mm Ø (Minimum)
- gg) Drum Diameter-1225 mm Ø (Minimum)
- hh) Drum Volume -890 litre (minimum)
- ii) Drum Depth -760 mm (Minimum)
- jj) Electric Load – 3.00 Kw (Minimum)
- kk) Dimensions :1270X1345X2380
- ll) Electric supply–380-415V, 3Ø, AC, 50hz.
- mm) Certification- The equipment should be either BIS/ USFDA or EUROPEAN CE certified with 4-digit no. which can be verified on either USFDA or EUROPEAN CE website. Also required will be certification from KIWA & CERTI GAZ.

5. Drying Tumbler

- a) Capacity – 30 kg Gas Heated
- b) Total Min capacity to dry 90-95 kg per hour.

- c) Minimum Fully Programmable Touch Plus Control Processor (TP2) with 7" touchscreen.
- d) Stainless steel drum
- e) Total Flow: Optimized axial-radial airflow.
- f) Drum with stamped perforations to guarantee the gentle treatment of fabrics.
- g) Lint filter at the bottom, more ergonomic, larger and improved airflow.
- h) Automatic reverse rotation of the drum.
- i) Frequency inverter for smoother operation.
- j) Double-glazed door with a large opening.
- k) Anti-wrinkle system.
- l) End of cycle tone.
- m) Emergency stop button and security micro magnet to stop operation.
- n) Fire Kare System (Integrated fire prevention system).
- o) Pulley and Poly-V belt transmission system with the drum supported on wheels.
- p) Heavy duty, Front Loading, Cool down Feature, Microprocessor control with 10 preset programmes, The dryer should be with temperature control system.
- q) Control – Microprocessor with touch screen 7" Display adjustable parameters such as temperature, programme and cool down time. And also the feature to control the moisture control in the dryer along with 10 preset programmes.
- r) Touch Panel Display of Temperature and drying time
- s) Time Controller- programmable time and temperature
- t) Flow system- Machine should have flow system in such a way that re circulation system reintroduces the expelled hot air inside the drum
- u) Humidity Sensor with intelligent drying and cool down at end of cycle.
- v) Door opening should be with double glass for better efficiency it should be large for easy loading and unloading
- w) Inner Drum–Should be made of Stainless steel AISI-304 with reversing drum feature and the drum should be perforated with stamped holes axially and radially to provide soft tissue treatment for garments.
- x) Insulated panels for complete thermal insulation of the machine for better savings.
- y) Integrated fire extinguishing system to provide maximum safety and immediate activation of the system In case of fire inside the dryer basket.
- z) Humidity sensor with intelligent drying feature for the continuous measurement for the garments in the cycle to prevent over drying and thus saving energy and time
- aa) Safety features: The tumble dryer should be equipped with overheating protection and a temperature sensor that turns off the heat if the airflow is clogged.
- bb) Installation: The tumble dryer should be having design for quick and simple installation by using the adjustable leveling feet. Only one external connection for electricity, gas, steam and exhaust should be required.
- cc) Door Lock: The dryer should have a safety function or feature, which means the dryer should stop in case the door is opened during operation.
- dd) Door Opening - 800 mm Ø (Minimum)
- ee) Drum Diameter-900 mm Ø (Minimum)
- ff) Drum Volume -550 litre (minimum)
- gg) Drum Depth -780 mm (Minimum)
- hh) Electric Load – 1.20 Kw (Minimum)
- ii) Dimensions :985X1054X1946 mm
- jj) Electric supply–380-415V, 3Ø, AC, 50hz.

- kk) Certification: The equipment should be either BIS/USFDA or EUROPEAN CE certified with 4 digit no. which can be verified on either USFDA or EUROPEAN CE website. Also required will be certification from KIWA & CERTI GAZ.

6. Flatwork Ironer (Calendaring M/c)- Gas Heated

- a) Front Feed Rear Return with Folder and Stacker - 650X3300 mm
- b) Flatwork Ironer and a maximum ironing surface for the utmost ironing quality
- c) Inverter Frequency inverter with 7" touch screen control which offers great flexibility and ease of use, as well as new features that enable better management of the laundry.
- d) High performance steel roller.
- e) Front insertion and reception of linen.
- f) Variable-frequency drive to control ironing speed.
- g) Safety protector for hands - Automatic stop on cooling (80 °C)
- h) Unit exterior constructed in sandwich panel and stainless steel.
- i) Powerful exhaust extraction system.
- j) Insertion and ironing belts in Nomex for easy operation, high quality ironing and great durability.
- k) Gas models with radiant burner. Ironer should have 7 ironing speeds, adjustable by variable frequency drive, for selection between 1.5m-15 m/ minute.
- l) Suitable for rapid ironing of linen like Bed sheets, Pillow cover or flat sheet etc.
- m) Roller Size- 650mm x 3300 mm length
- n) Simple & Reliable drive with roller technology and steel coated
- o) No. of Rollers- 1 and roll diameter should be 650 mm
- p) Working width -3200-3300 mm ironing width
- q) Control: Electronic Control Panel
- r) Machine should have panels in Stainless Steel and painted Steel.
- s) Exhaust –power exhaust system for better drying and efficiency
- t) Padding- Nomex padding
- u) Maximum Ironing Speed –15 m per minute
- v) Electric supply- 415V, 3Ø, AC, 50hz.
- w) Heating gas heated
- x) Electric Load -1 kw maximum
- y) Dimensions-4130X1020X1420mm
- z) Certification- The equipment should be either BIS/ USFDA or EUROPEAN CE certified with 4 digit no. which can be verified on either USFDA or EUROPEAN CE website. Also required will be certification from ANCCP, KIWA & CERTI GAZ

7. Flatwork Ironer (Calendaring M/c)-Gas Heated

- a) Front Feed Front Return -500X3300mm
- b) Flatwork Ironer and a maximum ironing surface for the utmost ironing quality
- c) Inverter Frequency inverter with 7" touchscreen which offers great flexibility and ease of use, as well as new features that enable better management of the laundry.
- d) High performance steel roller.
- e) Front insertion and reception of linen.
- f) Variable-frequency drive to control ironing speed.
- g) Safety protector for hands
- h) Automatic stop on cooling (80 °C)
- i) Unit exterior constructed in sandwich panel and stainless steel.
- j) Powerful exhaust extraction system.

- k) Insertion and ironing belts in Nomex for easy operation, high quality ironing and great durability.
- l) Gas models with radiant burner. Ironer should have 7 ironing speeds, adjustable by variable frequency drive, for selection between 1 and 8 m/ minute.
- m) Suitable for rapid ironing of linen like Bed sheets, Pillow cover or flat sheet etc.
- n) Roller Size- 500mm x 3300 mm length
- o) Simple & Reliable drive with roller technology and steel coated
- p) No. of Rollers- 1 and roll diameter should be 500 mm
- q) Working width -3200-3300 mm ironing width
- r) Control: Electronic Control Panel
- s) Machine should have panels in Stainless Steel and painted Steel.
- t) Exhaust –power exhaust system for better drying and efficiency
- u) Padding- Nomex padding
- v) Maximum Ironing Speed –8 m per minute
- w) Electric supply- 415V, 3Ø, AC, 50hz.
- x) Heating gas heated
- y) Electric Load -1 kw maximum
- z) Dimensions-4120X956X1189mm
- aa) Certification- The equipment should be either BIS/USFDA or EUROPEAN CE certified with 4 digit no. which can be verified on either USFDA or EUROPEAN CE website. Also required will be certification from ANCCP, KIWA & CERTI GAZ.

8. Flat Bed Press- Electric Heated

- a) Suitable for linen like uniform, room furnishing, personal garments, Bed sheets & Pillow
- b) Covers Head & Bed Size
- c) Dimensions of the universal plate - 1180X380X220 mm
- d) Steam heated
- e) Auto-timed, Auto-temperature controlled,
- f) Double Switch operation
- g) Built-in Suction Blower
- h) Pneumatically controlled
- i) Head - Polished Stainless steel high quality
- j) Upper plate goes up and down by means of 2 buttons steam to be operated by upper plate and lower plate
- k) Control - Frontally placed. Automatic digital timed release of the head at pre-set time.
- l) Push Button for raising and lowering of the head pneumatically
- m) Temperature- Digital temperature controller
- n) Dimensions :1370X 1080X 1250mm
- o) Electric supply- 415V, 3Ø, AC, 50hz
- p) Aspiration motor 0.6 hp
- q) Should have inbuilt boiler with 12kw capacity and equipped with vacuum unit along with steam gun and iron mode.

9. Vacuum Ironing Table ,Size -1550 X 580 X950

- a) Finishing table with iron, vacuum and built-in boiler.
- b) Electrically heated board control by thermostat
- c) Dimension of work table for 1200X400X250mm
- d) Iron boiler of electric operation with feeding of water and automatic production of steam.
- e) Integral steam boiler for better safety

- f) Should be equipped with hand iron and boiler capacity should be not less than 7 litres.
 - g) Iron balance equipped with the machine.
 - h) Special feature of overhead gantry to support iron hoses.
 - i) Electric supply- 200-240 V/ 1 Ph / 50 Hz/ AC
10. Dirty Linen Collection Trolley- 3 containers main 40-50- kg capacity.
The dirty linen trolley shall be having 3 containers with different colour coding bags for the collection of the linen from the wards and other areas supported on swelling wheels.
 11. Dirty Linen Transportation Trolley- Spring bottom type- Capacity Min 100 kg.
The dirty linen trolley shall be fabricated our HDPE fibre plastic/ SS/ aluminum and should have spring bottom feature for the better movement and performance along with swelling wheels. The trolley should be accessible to all hospital lifts. Trolley has to be colour coded to be used in clean and dirty area.
 12. Dirty Linen Transportation Trolley- Spring Bottom Type- Capacity Minimum 50 kg.
The dirty linen trolley shall be fabricated out of HDPE fibre plastic/ SS/ aluminium and should have spring bottom feature for the better movement and performance along with swelling wheels. The trolley should be accessible to all hospital lifts. Trolley has to be colour coded to be used in clean and dirty area.
 13. Mobile Folding Table- 4feetX2 Feet.
The folding table shall be specially designed for carrying rolling and folding of linen in the laundry. The frame of the table shall be fabricated out of MS welded construction with one bottom shelf for storage. Complete with heavy duty ball bearing for swivelling wheels. The table top shall be of polished Stainless steel.
 14. Fresh Linen Storage Rack Size - 1200mmx460mmx1800mm;
4 shelves; Made of Stainless Steel-AISI-304, Finished with Polishing.
 15. Linen Transportation trolley Capacity -100 kg.
The linen trolley shall be fabricated out of HDPE fibre plastic/ SS/ aluminium and should have spring bottom feature for the better movement and performance along with swelling wheels. The trolley should be accessible to all hospital lifts. Trolley has to be colour coded to be used in clean and dirty area.
 16. Linen Transportation trolley. Capacity -50 kg.
The linen trolley shall be fabricated out of HDPE fibre plastic/ SS/ aluminum and should have spring bottom feature for the better movement and performance along with swelling wheels. The trolley should be accessible to all hospital lifts. Trolley has to be colour coded to be used in clean and dirty area.
 17. Laundry Scrub Station with Two Sinks
Stainless Steel Construction. S.S Sinks with taps for wash and rinse using hot and cold water. SS Scrubbing Board in between Sinks. Underneath Shelf. Size- 1600x500x900 ht.
 18. Hot Water System-Gas Geyser Capacity: 300 Litres per Hour.
 - a) This Hot water system would provide the hot water as per the capacity
 - b) Glass Lined Tank for water heater use.

- c) Anode with low level of maintenance.
 - d) Low flue gas temperature for higher efficiency.
 - e) Additional pressure and temperature valve for safety
 - f) Fully automatic spark ignition & Automatic Control system
19. Air Compressor- The Air compressor should be Multistage Fully Automatic suitable for delivery dry compressed air at pressure compatible to machines
- a) Drive: Belt driven with pulleys belt and belt guard\
 - b) Motor -5 H.P
 - c) Electric supply- 415V, 3Ø, AC, 50hz.
20. Heavy duty Sewing machine
- a) Semi-Dry Automatic Lubrication to the Main Machine Parts.
 - b) Horizontal Axis Rotary Hook
 - c) Large Capacity Bobbin.
 - d) Extra Large Needle.
 - e) Sewing Speed RPM: 800
 - f) Max. Stitch Length: 5 to 12 mm
 - g) 13mm Presser Foot Clearance
 - h) Maximum Stitch Length of 4mm.
 - i) Lock Stitch Machine.
 - j) Equipment must be CE certified.
21. Weighing Scale -200 kg
- a) Accuracy +/- 0.1 %
 - b) The weighing machine shall be heavy duty platform type with Digital display weight indication. The platform for placement of buckets/goods for weighing shall be with steel casting with adjusting lever mechanism and knob for adjustment of error in machine.
22. Reverse Osmosis/Water softener Plant 5000 LPH
- a) Reverse Osmosis Plant 5000 Liters per hour capacity
 - b) Should have stainless steel skid mounts for pre-treatment and RO unit
 - c) Should have booster Pumps.
 - d) Should have direct bypass valve and auto flush systems.
 - e) Should have thin film composite membrane of equivalent.
 - f) Should have dry run protection of pump.
 - g) Should have auto flush timer.
 - h) Should have automatic tank level control.
 - i) Should have over voltage and over current protection.
 - j) Should have high efficiency reverse osmosis membrane.
 - k) Should have 10000 L purified water reservoir with bacterial vent filter to ensure microbiological integrity.
 - l) Should have re-circulation pump provides instantaneous delivery flow.
 - m) Should have comprehensive micro-processor monitoring and control system.
 - n) RO should of Eureka Forbes/Ion Exchange / Millipore / Kent / Aquacare / Rions make.
 - o) Consumable filters & other accessories of 2 each extra to be provided with

first supply & unit rate should be quoted for these items for 3 years.

23. IN ADDITION TO THE ABOVE, FOLLOWING TURNKEY WORKS FOR INSTALLATION AND COMMISSIONING OF LAUNDRY EQUIPMENT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR:

- || The turnkey work includes all modifications to the built-up space provided at the hospital site including Installation of Equipment, RO plant, civil works, electrical works, plumbing works, interior decoration, air conditioning, furniture and other related works of the Laundry unit required for the smooth and efficient functioning of the centre. These works shall comply with all relevant safety and standards guidelines. The vendor is fully responsible for installation and commissioning of all equipment. The work includes demolition of unwanted walls.
- || Bidder must take into consideration in its bid, costs to be incurred for any additional work pertaining to Civil, Electrical, Plumbing, Sanitary and any other protections relevant as per State/Central Govt. regulation/local authority, Servo stabilisers, U.P.S. etc. required for successful installation testing and commissioning of the system and the offered price should include all such costs, each Schedule is to be considered a package in itself and contractor to execute the order package on a “turn key basis”.
- || Electric distribution panel for the above laundry equipment complete with all switchgears, wiring and controls etc complete. (Switch gears of L&T/ Siemens/ ABB/GE or Schneider make)
- || Laying of water pipe line for Plumbing with necessary taps, joints, elbows, Unions, Tees and valves of IS-1239 standard (Latest version) to various supply points in the Laundry Room from single point supply (Provided by the hospital). Contractor will be responsible for supply and installation of water storage tanks and Booster pumps. Individual plumbing lines with valves are required.
- || Providing fixing of Electrical Gadgets like ELCB, MCB, Light Points, Power points, Cool air Fans, Exhaust fan etc in the laundry room.
- || Installation of MCB, ACB, ELCB & OCB of Havell/Siemens/L&T/Schneider etc for Control Panel for Laundry.
- || Installation of all Electrical cabling must be of IS: 1554 (As per latest amendment) standard and wiring as per IS: 732 standard and proper Earthing system of all Laundry equipments and other electrical instrument and accessories in the Laundry room as per standard guidelines of BIS (Latest edition). All cable trenches and railings should be made wherever required.
- || Construction/laying of Draining system from all the equipments /Sinks to the main drain (outside the Laundry) with SS Grating, proper trap and flow system and tapping.
- || Air-washing and ventilation should be provided with necessary GI ducting for fresh air and exhaustion of hot air to create comfortable working condition as per the ASHRAE/local authority/Regulatory body within the Laundry Room for areas such as clean store, sterile stores, packing area and office room. Motors shall be of continuous duty S1 type of IS: 325 standards (Latest version)
- || Contractor should provide effective firefighting system including fire extinguishers (It should be made as per the approved guideline of the local authority/Regulatory Body. The

contractor shall be solely responsible to get permit/approval from the local authority/Regulatory Body in case it is required).

In addition to the above-mentioned equipment/appliances, if the contractor thinks it necessary to include any other equipment/appliances, accessories etc. for the Laundry then that may be provided after approval from Engineer in-charge.

The sizes are approximate. Minor variations in sizes shall be acceptable subject to prior approval of the Engineer.

The makes for other items of LAUNDRY shall be as mentioned in the Civil, Electrical, PHE and HVAC of the tender document.

Note:

- The contractor shall be responsible for the complete works including submission of working drawing and walk-through view.
- The contractor should provide complete Operation manual, Equipment manual, Service manual and manuals for all systems and subsystems.
- The contractor should provide Final electrical safety test, system test and calibration to be done by authorized person with test instruments.
- Engineer may instruct for any test this has to be got done by contractor at their own cost.
- All electrical accessories like cable wire, electrical outlets, switches etc supplied by the contractor should be fire proof of reputed make, certified for electrical safety.
- Wherever makes have not been specified for certain items, the same shall be as per BIS and as per approval of HSCC.
- The contractor should provide test certificate for all materials and equipment used for Laundry
- Training of personnel of the Institute should be 2 weeks by the contractor.
- The contractor should prepare and submit layout plan as well as As-Built drawing for Steam Pipeline, Electrical Wiring, Electrical Distributional Panel, Plumbing, Fire Fighting System, Air Washing and Ventilation and Drain line to HSCC for approval before beginning of supply and installation and As-Built drawing after installation.
- The contractor should provide test certificate for all materials along with manufacturer's test certificate and equipment used for Laundry.
- Essential consumables for operation of Laundry shall be provided by the hospital.
- **Third party quality certification of the Laundry equipment** from SGS/TUV/Lloyds should be submitted by the contractor as "Certifies that the Laundry equipment to be supplied/supplied for installation meet the technical specification and BOQ of the tender document vide contract No (Mention Contract No.)."

Manufacturer's Authorization

Bidder must ensure & meet all the terms & conditions of tender documents including technical specifications. The lowest responsive bidder shall submit the Manufacturer's Authorization letter as per format enclosed at Annexure-E of Vol-III, SCC of tender documents along with quality certificates as per the standards mentioned in the tender documents for all the equipment/items.

The Manufacturer's Authorization letter along with other supporting documents shall be submitted by the lowest responsive bidder within 15 days of issue of Notification of Award letter and the bid security shall be released after receiving of mentioned documents, failing which bid security shall be forfeited and award of work shall stand cancelled.