REPUBLIC OF LEBANON

Ministry of Public Health

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSTRUCTION OF AKKAR – ONE DAY SURGERY GOVERNEMENTAL HOSPITAL - SAHLEH

VOLUME 2-3 SPECIFICATIONS

CONVEYING SYSTEM

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August, 2026

DIVISION 14

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CONVEYING SYSTEM

LIFTS (14400)

A. General

This section covers the supply and complete installation of a complete set of five (5) lifts as described hereafter. The contractor shall provide all materials, labour and equipment necessary for the supply, installation and maintenance of the works.

Applicable standards are as a follows:

- EN-81 Requirements of the European code for elevators
- BS 5655 Lifts, Escalators, Passenger Conveyors or other equal and approved.

Contractor shall submit for approval a complete set of original catalogue cuts showing all details and requirements.

A complete set of shop and construction drawings are to be submitted for approval including at least :

- Lifts characteristics,
- Installation details,
- Civil works requirements (for pit, hoistway and machine room)
- Any required modification to the structure,
- Handling requirement if needed in the machine room,
- Electrical characteristics,
- etc...

Contractor is to prove to the Engineer the presence of an authorized locally established dealer for the provision of spare parts and maintenance requirements. Any failure to prove the above will lead to a direct disqualification.

Contractor shall guarantee the materials and workmanship furnished under this section of the specification for one year period starting from date of work acceptance.

Contractor is also to provide a one year maintenance period starting from the date of work acceptance in addition to all certificates/tests required by the Engineer.

All the above requirements are to be quoted by the contractor in the submission of price.

B. Lifts Characteristics

B1. Passenger Lift

a. Technical

- Number of lifts: 2
- Type of service: Passengers (visitor)
- Nb of persons: 13 (1000 Kg)
- Speed (m/s): 1
- Power drive: Variable voltage, Variable frequency
- Operation: Full collective
- Group: Duplex

- Machine: Gearless traction machine and compact motor installed on top of guide rails.
  - Power supply: 380V-3Ph-50Hz
  - Number of stops: 4 (Future second floor provided).

- Doors type: Automatic, Central opening
- Travel (m): 15.20m (Future second floor provided)
- Door opening (m): 1.1 m structural opening 0.9m clear opening

b. Finishes

- Ceiling	:	Flat decorative ceiling with spots
- Panels	:	Hairline brushed Stainless Steel
- Mirror	:	Rear side, half height
- Handrails	:	Rear side, circular bar shape, Ø 38mm, brushed Stainless Steel.
- Car Entrance	:	Brushed Stainless Steel
- Car Door	:	Brushed Stainless Steel
- Flooring	:	Vinyl tiles 30cm x 30cm

B3. Patient Lift

a. Technical

- Number of lift: 1
- Type of service: Patient
- Nb. of persons: 16 (1250 Kg)
- Speed: 0.6 m/s
- Power drive: Variable voltage, variable frequency
- Machine: Gearless traction machine and compact motor installed on top of guide rails.
- Power supply: 380V-3Ph-50HZ
- Number of stops: 4 stops (Future second floor provided)
- Door type: Automatic control opening
- Travel: 15.20m (Future second floor provided)
- Door opening: 1.4 m structural opening 1.2m clear opening

b. Finishes

- Ceiling	:	Flat decorative ceiling with spots
- Panels	:	Hairline brushed Stainless Steel
- Handrails	:	Rear side, circular bar shape, Ø 38mm, brushed Stainless Steel.
- Car Entrance	:	Brushed Stainless Steel
- Car Door	:	Brushed Stainless Steel
- Flooring	:	Vinyl tiles 30cm x 30cm

B4. Service Lift

a. Technical

- Number of lift: 1
- Type of service: Service lift.
- Nb. of persons: (1000 Kg)
- Speed: 1 m/s
- Power drive: Variable voltage, variable frequency.
- Operation : Full collective.

- Machine: Gearless traction machine and compact motor installed on top of guide rails.
  - Power supply: 380V-3Ph-50HZ
  - Number of stops: 4 stops (Future second floor provided)
  - Door type: Automatic, central opening
  - Travel: 15.20m (Future second floor provided)
  - Door opening: 1.1 m structural opening 0.9m clear opening

b.Finishes

- Ceiling : Decorative ceiling with spot
- Panels : Hairline brushed Stainless Steel
- Car Entrance : Brushed Stainless Steel
- Car Door : Brushed Stainless Steel
- Flooring : Vinyl tiles 30cm x 30cm

B5. Lift charge

a. Technical

- Number of lift: 1
- Load : 450 Kg
- Speed: 0.6 m/s
- Power drive: 380 V – 60GH- 3PH
- Machine : Traction machine
- Number of Step : 2
- Door type : Automatic , central opening.
- Travel : 7.50m

b.Finishes

- Ceiling : Stainless steel with spot
- Panels : Brushed Stainless Steel
- Car Door : Brushed Stainless Steel
- Flooring : Vinyl tiles 30cm x 30cm

C. General Requirements

C.1 Machine

Shall be of the single wrap traction type and shall include a motor, electro-mechanical brake, gear, steel sheave shaft, etc..., all compactly mounted on a single plate. Motor shall be squirrel cage induction especially designed for variable voltage, variable frequency drive. Brake will be spring applied and electrically released, designed to provide smooth stops under variable loads.

C.2 Car construction

Comprises structural steel frame members suitably braced and fastened together. The roof is to be reinforced with a trap door (at least 500mm x 600mm) opening outward and capable of being opened from both sides. Opening of trap is to prevent operation of lift. Load weighing device to be built into floor. Micro switches are also to be installed to by-pass landing calls when car is loaded to about 85% capacity. Calls shall remain registered to be attended by next "free" car.

Guide devices are to be adjustable and fastened to the top and bottom of car frame. Each car is to have necessary lighting and exhaust fan. Fan and lighting are to switch on automatically when car is called on when landing doors are opened, remain on while the car is in operation and switch off after a time delay after car has stopped. Fluorescent lamps are to be of the rapid start type. An emergency power unit employing 12V sealed rechargeable battery and static circuits shall be provided to illuminate the car(s) and provide current to the alarm bell in the event of power failure, and this for a period of 6 hours.

(Car finishes: stainless steel).

Doors to be automatic central opening

C.3 Guide rails

Are to be planed steel tees, provided as guides for the car and counterweight, and shall be securely fastened to the building's structure.

C.4 Counter weight

To be of a suitable guided structural steel frame with appropriate sub-weights to promote smooth and economical operation.

C.5 Suspension ropes

Are to be of high grade traction steel of suitable size. Ropes are to be securely attached to car and counterweight and are to have independent means of adjustment.

C.6 Safety gear

Is to be provided to stop the car whenever excessive descending speed is attained. Operation is got by a centrifugal speed governor located at the top of the hoistway. Stopping method to be smooth, and suitable means are to be provided to cut off the power as a first step and if the speed exceeds the first step then a braking system is applied to activate as a second step.

C.7 Buffers

Are to be installed under each car and counter weight. Buffers are to be mounted on steel channels in the pit.

C.8 Controller

Is to be of the totally enclosed cubicle type, constructed from sheet steel provided with ventilation louvres. Controller to include protection against the following :

- No voltage or sustained under voltage,
- Overcurrent,
- Phase reversal of power supply,
- Any phase missing
- Overload

Controller is to cut off power supply, apply brake and bring car to rest in the event of any of the above failures.

C.9 Emergency rescue device

Is to be provided to enable the elevator stop at the nearest floor in case of power failure.

C.10 Car control panel

Is to be located in an approved position and to contain at least the following :

- Up and down illuminated arrows
- Floor digital position
- Alarm push button
- Pushes for each floor served (illuminated)
- Emergency stop push button
- Key operated car switch
- Attendant key operated switch
- Card reader (to allow elevator serve N-5 level, refer to D. control system
- Door open and close push buttons,
- Fan key switch
- Overweight buzzer
- Intercom unit, powered by an emergency battery supply.

C.11 Top of car inspection buttons

Are to be installed on top of the car to give the inspector manual control of the car.

C.12 Directional indicators at landings

Are to be installed at each lift entrance to indicate arrival and direction of car arriving at landing.

Gong is to be provided to indicate car arrival. Push buttons at landings are to comprise illuminated up and down pushes. Terminal landings are to have one push. At level N-5 call push button is to be replaced by a card reader to allow car call by authorized personnel only.

C.13 Emergency key

Is to be handed to the client to open all landing doors

C.14 Hoistways and pits

Are to be illuminated using 100w covered lights (weatherproof, IP54 minimum) at regular intervals protected with an adequate circuit breaker installed in the machine room.

C.15 Wires and cables

Inside machine room, wires and cables are to be PVC insulated, 600/1000V grade, flame retardant. Conductors are to be copper. Metal frames of installations are to be earthed.

D. Control System (Full Collective)

No car is to be able to move unless car and corresponding landing door are fully closed and interlocked. It is not possible to open landing door except that at which car is stopped or using a special key. Operation of emergency stop device in any car is to bring this car to an immediate stop and to remain stopped until device is reset.

The group of lifts shall employ "a full collective group" control system. The number of cards is limited to the number of car parking available to tenants.

The system shall operate by storing cars and landing calls through a microprocessor based supervisory program. Without calls in the system, cars shall be parked at predetermined floors with one car at the main landing and the other cars evenly dispersed through the building. When landing calls are entered into the system, the program shall gather data from each car in order to determine its current availability for a call and response time. Such data include distance from call, car registered calls direction of travel, car load, etc...

Cars shall be allocated and reallocated to keep the call with the best suited car. Landing calls shall be by-passed but not canceled if car load is approximately 85% of assigned contract load.

If for any reason the car is unable to respond to a landing call, the call shall be transferred to the next car on the result sequence.

It is to be noted here that access to level N-5 is restructed to authorized personnel having special cards. Adequate car readers are to be installed in each car and at the landing of N-5 level to allow such personnel acceed this level. Any push not validated with the card won't be registered and any repetitive attempt will be transferred to the control personnel. The number of cards required is 200.

E. Installation And Tests

Equipment to be factory assembled, at the country of origin, wired and tested. Site work to be limited to installation and assembly of parts dismantled at factory in the country of origin for transportation or otherwise.

Work is to be carried out in a neat, efficient manner in accordance with the requirements of the specifications. Installation to be performed by skilled personnel who are the permanent employment of the authorized dealer.

Equipment installations must be coordinated with the building construction.

Tests are to be carried out in compliance with BS 5655 part10 including free-fall tests, load and speed tests, etc...

A tests certificate is to be issued to the client.