

# **TECHNICAL SPECIFICATIONS**

**“Balance Civil & MEP Works”**

**FOR**

**‘Espace Premier’**

**AT**

**GURUGRAM, HARYANA**

## 1. **GENERAL**

The work in general shall be executed as per the description of the item, specifications attached and CPWD Specifications (Latest version). Wherever any reference to any Indian Standard Specifications is made in the document relating to this contract, the same shall be inclusive of all amendments issued there to or revision thereof, if any, up to the date of receipt of tender. The rates quoted by the contractor shall be inclusive of all items, included in these specifications and special conditions and nothing extra shall be payable whatsoever unless otherwise specified.

However, wherever required by Engineer in charge, the contractor shall submit a detailed methodology for execution of the specific work and shall get the same approved before the start of that specific work.

For the specialized works contractor shall engage specialized agencies with prior approval of Engineer-In-Charge.

Wherever it is mentioned "at all levels" in Schedule of Rates/ Technical Specifications for any item, the same shall be considered for "at all heights" irrespective of height of the structural element viz. Columns, Walls, Retaining walls etc. Contractor to quote his rates accordingly and nothing extra shall be paid on this account.

Retaining wall, Basement structure shall be considered under works upto plinth level only irrespective of the height of the basement above the Ground Level.

## 2. **CARRIAGE OF MATERIALS**

The carriage and stacking of materials shall be done as per Sub-head No-1 of CPWD Specifications Volume-1. However, where CPWD specifications are not available, the work shall be carried out with prior approval of Engineer in charge.

## 3. **Measurements**

- Measurements shall be done as per the relevant CPWD specification/ IS codes. However for HARD ROCK' and SOFT ROCK/DISINTEGRATED ROCK, following mode shall be followed for measurement;
- Excavated materials from 'HARD ROCK' and SOFT ROCK/DISINTEGRATED ROCK shall be stacked separately, measurement reduced by 50% to allow for voids to arrive at the quantity payable under 'hard rock' and 'soft rock' respectively.
- The difference between the entire excavation (worked out from the levels) and such of the quantities payable under 'hard rock' and 'soft rock/disintegrated rock' shall be paid for as excavation in all kinds of soil.

# **Technical Specifications for Civil Works**

1. **Earth work-** The Work shall be carried out as per CPWD Specifications, Volume-I 2019, Chapter-02 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.
2. **Concrete Work-** The Work shall be carried out as per CPWD Specifications, Volume-I 2019, Chapter-04 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.
3. **RCC work-** The Work shall be carried out as per CPWD Specifications, Volume-I 2019, Chapter-05 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.
4. **Masonry work-** The Work shall be carried out as per CPWD Specifications, Volume-I 2019, Chapter-06 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.
5. **Cladding work-** The Work shall be carried out as per CPWD Specifications, Volume-I 2019, Chapter-08 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.
6. **Wood work-** The Work shall be carried out as per CPWD Specifications, Volume-I 2019, Chapter-09 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.
7. **Steel work-** The Work shall be carried out as per CPWD Specifications, Volume-I 2019, Chapter-10 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.
8. **Flooring work-** The Work shall be carried out as per CPWD Specifications, Volume-I 2019, Chapter-11 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.
9. **Roofing work-** The Work shall be carried out as per CPWD Specifications, Volume-I

2019, Chapter-12 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.

**10. Finishing work-** The Work shall be carried out as per CPWD Specifications Volume-II

2019, Chapter-13 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.

**11. Dismantling & Demolishing-** The Work shall be carried out as per CPWD Specifications

Volume-II 2019, Chapter-15 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.

**12. Repair to Buildings-** The Work shall be carried out as per CPWD Specifications Volume-II

2019, Chapter-14 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.

**13. Waterproofing work-** The Work shall be carried out as per CPWD Specifications Volume-II

2019, Chapter-22 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.

**14. Aluminium Works -** The Work shall be carried out as per CPWD Specifications Volume-II

2019, Chapter-21 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.

**Note: In addition to above, aluminum works shall be carried out by the contractor, considering the following points.**

- 1. Shop drawings and Design Calculation Shall be prepared and submitted by contractor for approval of engineer in- charge prior to commencement of work.**
- 2. Aluminum profile / section as provided in existing flats shall be preferred.**
- 3. Aluminum casement door shall be provided with heavy duty hinges.**
- 4. Rate given are inclusive of all the work stated above, nothing extra shall be paid.**

# **Technical Specifications for Plumbing Works**

1. **Sanitary Fixture & Fittings** - The Work shall be carried out as per CPWD Specifications Volume-II 2019, Chapter-17 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.
2. **Sewerage & Drainage Work** - The Work shall be carried out as per CPWD Specifications Volume-II 2019, Chapter-19 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.
3. **Water Supply System Work**- The Work shall be carried out as per CPWD Specifications Volume-II 2019, Chapter-18 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.
4. **Soil, Waste, Vent & Rain pipe fittings Work**- The Work shall be carried out as per CPWD Specifications Volume-II 2019, Chapter-17 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.

## **NOTE:**

1. **In the Items of Providing & fixing of Wall mounted C.P fittings, Prices are inclusive of providing & fixing of items like wall flanges and W.C connector etc.**
2. **In the Items of Providing & fixing of basin mixture, Prices are inclusive of providing & fixing of braided pipe also.**

# **Technical Specifications for Electrical Works**

- 1. Wiring Work** - The Work shall be carried out as per CPWD General Specification for Electrical Work Part-01 Internal 2013, Chapter- 3 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.
- 2. Sub mains & cables Work**- The Work shall be carried out as per CPWD General Specification for Electrical Work Part-01 Internal 2013, Chapter- 3 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.
- 3. Distribution System Work**- The Work shall be carried out as per CPWD General Specification for Electrical Work Part-01 Internal 2013, Chapter- 3 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.
- 4. Earthing Work**- The Work shall be carried out as per CPWD General Specification for Electrical Work Part-01 Internal 2013, Chapter- 8 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.
- 5. Fixtures & Fittings Work**- The Work shall be carried out as per CPWD General Specification for Electrical Work Part-01 Internal 2013, Chapter- 3 However, where CPWD specifications are not available, the work shall be carried out with prior approval of EIC.

## **Technical Specifications for HVAC works**

1. **General condition:** - Please refer CPWD General Specification for HVAC Work 2017 Chapter 1.
2. **System and requirements:** - Please refer CPWD General Specification for HVAC Work 2017 Chapter 2.
3. **Architectural and structural requirements:** - Please refer CPWD General Specification for HVAC Work 2017 Chapter 3
4. **VRV/VRF and Package Unit:** - Please refer CPWD General Specification for HVAC Work 2017 Chapter 4.
5. **Central Air conditioning plant:** - Please refer CPWD General Specification for HVAC Work 2017 Chapter 5.
6. **AHU, FCU and Air Distribution System:** - Please refer CPWD General Specification for HVAC Work 2017 Chapter 6.
7. **Cooling Towers:** - Please refer CPWD General Specification for HVAC Work 2017 Chapter 7.
8. **Circulating Water Pumps:** - Please refer CPWD General Specification for HVAC Work 2017 Chapter 8.
9. **Ducting:** - Please refer CPWD General Specification for HVAC Work 2017 Chapter 9.
10. **Water Plumbing Works:** - Please refer CPWD General Specification for HVAC Work 2017 Chapter 10.
11. **Insulation Works:** - Please refer CPWD General Specification for HVAC Work 2017 Chapter 11.
12. **Controls:** - Please refer CPWD General Specification for HVAC Work 2017 Chapter 12.
13. **Electrical Works:** - Please refer CPWD General Specification for HVAC Work 2017 Chapter 13.
14. **Central Heating System:** - Please refer CPWD General Specification for HVAC Work 2017 Chapter 14.
15. **Mechanical Ventilation & ETAC:** - Please refer CPWD General Specification for HVAC Work 2017 Chapter 15.
16. **Cold Rooms:** - Please refer CPWD General Specification for HVAC Work 2017 Chapter 16.
17. **Inspection, Testing and commissioning:** - Please refer CPWD General Specification for HVAC Work 2017 Chapter 17.
18. **Building Management System:** - Please refer CPWD General Specification for HVAC Work 2017 Chapter 18

## Technical Specifications for Passenger Lift

PARAMETERS COMMON TO ALL LIFTS		
<b>1</b>	<b>Machine</b>	
1.1	Power Supply	415V/240V, 50 Hz
1.2	Acceptable voltage fluctuation	+10 to - 20%
1.3	Rate of acceleration / deceleration (m/sec <sup>2</sup> )	0.6 - 1.5 (adjustable at site)
1.4	Jerk (m/sec <sup>2</sup> )	0.7 - 1.5 (adjustable at site)
1.5	Vibrations in car horizontal/ vertical	20/18 MG maximum
1.6	Noise level in car	45 dBA maximum
1.7	Noise level in machine room at 1 mtr from machine	52 dBA maximum
1.8	Door noise level while closing and opening at a distance of 1 mtr from car door and 1.5 mtr from floor level	52dBA maximum
<b>2</b>	<b>Fixtures / signals inside car</b>	
2.1	Normal lighting	LED recessed type
2.2	Emergency light and alarm bell (to security room)	With SMF battery operated with charger rated for 30 minute
2.3	Ventilation	Blower Fan
2.4	Operating buttons and indications	Stainless steel full height car operating panel with following buttons and indications.
		LED Illuminated push buttons of micro pressure type corresponding to the floors served
		Door open button, door close button with arrow indicator
		Emergency stop button



		Emergency alarm button
		Two position key operated switch for 'with attendant' and 'without attendant' operation.
		Ventilation fan ON/OFF switch with auto OFF when there is no call after 120 seconds.
		Built in intercom of the hands free type inside the car and Table top type Handsets in machine room and security/reception including wiring and EPABX.
		Dynamic car direction display
		Digital position indicators
		Audio/Visual overload warning indicator
		Provision of EPBAX interface with BMS (if applicable)
2.5	Music(Music Speaker)	Trailing cable
	CCTV	Trailing cable
2.6	Voice synthesizer	To be provided
	ARD	To be provided
2.7	Display	LED display inside car
2.8	Hand rail	Stainless steel handrail to be provided as required.
3	<b>Landing signals</b>	
3.1	Hall buttons	Self illuminating micro-push type in hair line stainless steel facia plates
3.2	Car Position	Digital position indicators along with direction of travel (with audible signal in each elevator lobby)
3.3	Hall gong	Up/down indicator with single stroke gong/chime at all landing
4	<b>Safety features</b>	
4.1	Door safety	Temper proof infrared curtain covering the entire height of the door should be provided in the lift doors.
4.2	Buffer	Spring Buffer to be provided
4.3	Overload protection	➤ Overload protective device

		➤ Overload non starter.
4.4	Over travel protection	Terminal and final limit switches to be provided
4.5	Motor protection	Trip devices for : ➤ Over current ➤ Under voltage ➤ Over voltage ➤ Single phasing ➤ Earth leakage ➤ Phase reversal
4.6	Interlocking of car and hoistway doors	To be provided as per specifications.
4.7	Safety instructions ( Do's & Don'ts	Safety instruction in stain less steel to be provide
4.8	Fire rating of landing doors	2 hr fire rated
6	<b>Associated Civil and structural items</b>	All civil and structural items of work associated with erection and operation of lifts shall be provided by the Contractor at his cost including (but not restricted to) the following.
		Temporary Scaffolding and safety barricades for erection in and around lift hoist ways
		Bearing plates
		Buffer supports
		Facia plates
		Ladder in pits
		Safety railing on top of car
		Channels, separators, stretchers etc.
7	<b>Fireman's switch</b>	To be provided at GF/ Lobby level
8	<b>Free Comprehensive Maintenance Period</b>	<b>ONE YEARS</b> after completion of work and handing over of the Lifts in satisfactory operating condition.

**SPECIAL DATA TO BE FURNISHED BY TENDERERS**

SI No	Data to be filled in by tenderers	Passenger lifts	Stretcher Lift
<b>A</b>	<b>Equipment details</b>		
1	Machine type (Geared/Gearless)		
2	Reduction gear unit ratio		
3	Drive motor data		
i)	kW		
ii)	Starting current (Amp)		
iii)	F.L. Rated current (Amp)		
iv)	Max. no. of starts per hour.		
v)	Insulation class		
4	Hoist/Governor ropes (no. and size)		
5	Max. temperature tolerance during peak summer months		
6	Heat release data for machine room equipment		
<b>B</b>	<b>Special features</b>		
	Tenders to confirm Included /Not included in respect of the following	Included/Not Included	Included/Not Included
1	Auto fan off switch		
2	Fan inside the Car		
3	Over load warning indicator		
4	Ni-Cd batteries with charging circuit.		
5	Doors safety		
6	Additional weight permitted inside the car for interiors.		
<b>C</b>	<b>Performance parameters</b>		
1	Leveling accuracy		
2	Governor tripping speed.		