



**COAL GASIFICATION PLANT FOR GENERATING  
SYNTHETIC NATURAL GAS (SNG) AT BARDHAMAN,  
WEST BENGAL (INDIA)**

**COAL GAS INDIA LIMITED (CGIL)**



**Date 16.05.2026**

**CORRIGENDUM-XI**

**NIT NO., : PNMM/PC-217/E/001 DATED 10.10.2025**

**SUB. :COAL GASIFICATION PLANT FOR GENERATING SYNTHETIC NATURAL GAS  
(SNG) AT BARDHAMAN, WEST BENGAL (INDIA)**

This is for information to all Bidders who are willing to participate in the subject NIT, that CORRIGENDUM-XI date 16.05.2026 is being issued and shall be read in conjunction to the NIT and subsequent Amendments issued till date.

\*All other terms & conditions of NIT shall be as per original NIT and subsequent Amendment(s).

For & on behalf of  
COAL GAS INDIA LIMITED (CGIL)

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**COAL GASIFICATION PLANT FOR GENERATING SYN GAS (CO+H<sub>2</sub>)  
FOR PRODUCTION OF SYNTHETIC NATURAL GAS  
NIT NO. : PNMM/PC217/E/001 Dated 10.10.2025**



**Corrigendum-XI: Technical (Electrical) dated -16.05.2026**

SL. NO.	REFERENCE OF BIDDING DOCUMENT				AMENDMENT TYPE M/D/A	MODIFICATION / ADDITION
	Part/Sec.	Page No.	Clause No.	Description as per NIT		
1.	General			Building/Structures for Coal Gasification, Coal Milling & Coal Screening cum Crushing.	A	<p>Electric Passenger-cum-Goods Lift(s) in covered shaft / hoist way, complete with all accessories and lighting, shall be provided for the following minimum facilities:</p> <ul style="list-style-type: none"><li>• “Coal Gasification Building / Structure”</li><li>• “Coal Milling Building / Structure”</li><li>• “Coal Screening cum Crushing Building / Structure”</li></ul> <p>Each of the above facilities shall be provided with a dedicated <b>Traction Wire Rope type Passenger-cum-Goods Lift</b>.</p> <p>In addition to the above facilities, if required based on detailed engineering and operational considerations, the LSTK Contractor shall also provide lifts for any other area(s) deemed necessary within the LSTK-1 scope.</p> <p>The hazardous area classification shall be the responsibility of the LSTK Contractor. All electrical equipments, including those within the lift machine room and associated areas shall be selected, designed and installed in accordance with the applicable hazardous area classification.</p> <p>The lifts shall be provided with automatic, centrally opening, horizontal sliding car doors as well as automatic, centrally opening, horizontal sliding landing doors. The rated speed of the lifts shall be selected based on travel height and operational/service requirements, however, it shall not be less than 1.0 m/s.</p>



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						<p>The machine room shall be located at the overhead level and shall be of non-pressurized type. All the electrical equipments installed within the machine room shall be suitable for the applicable electrical area classification.</p> <p>The lift drive system shall be of VVVF (Variable Voltage Variable Frequency) type.</p> <p>The lifts shall conform to the latest edition of IS: 14665 and shall be provided with machine room located at ground floor.</p> <p>Each lift shall be designed considering the heaviest equipment/component required to be handled/transported to the topmost operating level of the respective building/structure. A minimum capacity margin of 15% over the weight of the heaviest equipment/component weight shall be considered.</p> <p>PDIL Technical Specification for Lifts is enclosed herewith (as per Annexure-I attached) and shall be considered as the minimum requirement. The LSTK Contractor shall ensure full compliance with the same in addition to the requirements specified herein.</p> <p>The rated capacity of each lift shall be determined by the LSTK Contractor during the detailed engineering stage and shall be subject to review and approval by CGIL/PDIL. However, the minimum rated capacity of each lift shall not</p>



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						be less than 2 tonnes.  Note: - In case of any conflict between this amendment and the PDIL Technical Specification, the requirements specified in this amendment shall govern and take precedence.

M: MODIFICATION, A: ADDITION, D: DELETION,



**TECHNICAL SPECIFICATION –  
PASSENGER CUM GOODS LIFT (TS-8206)**

TS-8206	0
DOCUMENT NO.	REV.
SHEET 1 OF 14	

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**TECHNICAL SPECIFICATION  
PASSENGER CUM GOODS LIFT**

**CONTENTS**

SECTION NUMBER	DESCRIPTION	SHEET NUMBER
1.0	SCOPE	3
2.0	STANDARDS TO BE FOLLOWED	4
3.0	SERVICE CONDITIONS	4
4.0	OPERATIONAL REQUIREMENTS	4
5.0	MACHINE ROOM	5
6.0	GENERAL DESIGN & CONSTRUCTIONAL FEATURES	6
7.0	GENERAL DESIGN & CONSTRUCTIONAL FEATURES OF MECHANICAL EQUIPMENT	6
8.0	GENERAL DESIGN & CONSTRUCTIONAL FEATURES OF ELECTRICAL EQUIPMENT	9
9.0	PAINTING	11
10.0	TESTS AND INSPECTION	12
11.0	ERECTION, TESTING AND COMMISSIONING	12
12.0	SPARES	12
13.0	DRAWINGS AND DOCUMENTS	12
14.0	DEVIATIONS	13
ANNEXURE - I	DOCUMENTATION FOR PASSENGER CUM GOODS LIFT	16

**1.0 SCOPE**

- 1.1 This standard covers the technical requirements of design, manufacture, supply, erection, testing and commissioning of general purpose Passenger cum Goods Lift.
- 1.2 The scope of work shall include, but not limited to the following items :
- i) Haulage mechanism
  - ii) Counter weights
  - iii) Guides
  - iv) Car with frame
  - v) Landing gates
  - vi) Door frames
  - vii) Control Panel
  - viii) Brakes
  - ix) Indication
  - x) Car lighting arrangement
  - xi) Car telephone
  - xii) Car Ventilation
  - xiii) Earthing
  - xiv) Gas Mask
  - xv) All other items not specified, but required for safe and proper operation of the lift.
- 1.3 This standard shall be read in conjunction with Design Philosophy - Electrical and other references as specified therein.
- 1.4 The LSTK Contractor will provide power/ lighting/ DC supply through a single feeder required at a suitable point in the machine room. The supplier shall include the isolation switch and all distribution equipment, cabling and wiring required for power, control and car lighting, telephones for the safe and proper operation of the lift. General lighting of the machine room and the landings are excluded.
- 1.5 Civil and structural work required for lift well, lift pit and machine room shall be provided by the LSTK Contractor in accordance with the requirement indicated by the supplier. However, necessary scaffolding in the hoistway, minor civil work, pit ladder, hoistway wiring, all steel material required for supports, lift shaft, bearing plates, buffer support channel, separator channel, sill support angle etc. are included in the scope of work.
- 1.6 The manufacturer shall be responsible for obtaining statutory approval for all equipment in lift installation from the factory inspector/electrical inspector of the state where the same is installed.
- 1.7 The vendor shall indicate the power requirement, loads and other details for structural design within 6 weeks from the date of L.O.I. to enable the LSTK Contractor to provide the above mentioned services.

## 2.0 STANDARDS TO BE FOLLOWED

- 2.1 The equipment and installation shall conform to the latest issues of the following relevant Indian Standards. Equipment complying with equivalent IEC standards shall also be acceptable.
- IS 14665 : Part -- Electric traction lifts: Part 2 code of practice for installation,  
2 : Sec 12 operation and maintenance: Sec 1 passenger and goods lifts:  
Sec 2 service lifts
- IS: 2365 -- Steel wire suspension ropes for lifts, elevators and hoists.
- IS 17900 (Part -- Lifts for the transport of persons and goods Part 1: Safety Rules  
1)
- IS: 3534 -- Outline dimensions of electric lift.
- IS: 4666 -- Electric Passenger and goods lifts.
- IS: 8151 -- Single speed three phase induction motors for driving lifts.
- EN 81-1 -- Safety rules for construction and installation of lifts
- EN 81-20 -- Technical requirements for construction and installation of lifts
- EN 81-50 -- Design rules calculations and tests of lift components
- ASME A17.1 -- Safety code for Elevator and Escalators
- 2.2 The design, installation and operational features of the equipment shall also comply with the provisions of the latest version of the following Acts and Statutory Regulations.
- a) The Factory Act.
- b) Lift Act
- c) The Indian Electricity Rules
- d) Fire Insurance Regulations
- 2.3 The supplier shall make suitable modification, addition/ alterations in the equipment, wherever necessary to comply with the above mentioned Act/ Rules/ Regulations.
- 2.4 Wherever any requirement laid down in this standard differs from that in Indian Standards, the requirements specified herein shall prevail.

## 3.0 SERVICE CONDITIONS

### 3.1 Ambient Conditions

These shall be as indicated in Design Philosophy - Electrical.

### 3.2 System Details

These shall be as indicated in Design Philosophy - Electrical.

## 4.0 OPERATIONAL REQUIREMENTS

- 4.1 All electrical equipment shall be Flameproof/ Increased Safety/ hose proof type design for successful use in the extreme conditions of voltage and frequency variations without exceeding the maximum specified temperature.

4.2 For control and safety features, 115 Volts A.C. single phase, 50 Hz supply shall be used. This shall be arranged by the supplier by suitable double wound stepdown transformers with one pole earthed. Where D.C. supply is required, necessary rectifiers etc. shall be included in the offer. 110 V/ 220 V D.C. supply will be provided by the LSTK Contractor for operating the emergency alarm bell and Emergency light in case of power failure.

#### 4.3 **Capacity & Duty**

These shall be as indicated in Design Philosophy - Electrical.

#### 4.4 **Method of Power Control**

4.4.1 The operation of the lift shall be automatic without the need for any car attendant.

##### 4.4.2 Operating Devices

i) In the Car

Flush type attractively finished metal panel housing push-buttons one for each landing, an emergency stop push button, light switch, fan switch and an alarm switch shall be installed in the car.

ii) In each landing

- a) Flush type attractively finished metal housing shall be installed at each landing with a single push button for calling the lift. The call button shall not be provided at emergency landings. However, door at all emergency landings shall be provided.
- b) Dust protective (car door open) lights shall be provided at each landing in a separate metal housing installed on the wall.
- c) All normal & emergency landing doors shall be manually operable having single leaf spring closing feature.

##### 4.4.3 Normal Operation

The car cannot be started unless the car gate is in the closed position and all hoist-way doors are in the closed position. Momentary pressure on a car button shall move the car to the landing selected where the car shall stop automatically. Uninterrupted movement of the car shall be ensured until the desired landing is reached.

A time relay shall be provided to make the car inoperative for a few seconds after the desired landing is reached or whenever a stop command is given. This interval shall be adjustable but sufficient to permit a passenger to enter the car or leave the car including the close/open operations of the car gate and hoist-way door. The closing and opening of the car gate shall be done manually on entering the car.

##### 4.4.4 Emergency Operations

In case of power failure, suitable provision shall be made for manual hoisting or lowering of the lift to the nearest landing. It shall be possible to open the car gate and landing doors manually at which the car is at rest in the event of failure of power.

## 5.0 **MACHINE ROOM**

The machine room shall be located at ground floor above 0.5 m from finished floor level. Machine room shall be freely ventilated through openings fitted with fixed louvers and exhaust fan. Access to this machine room shall be provided through an adequately

sized aluminium door for an easier removal of the equipment installed therein. The supplier shall indicate the details of machine room viz size etc. Any other arrangement required for the safe operation of the equipment shall have to be provided by the lift vendor.

## **6.0 GENERAL DESIGN & CONSTRUCTIONAL FEATURES**

The design of the lift and the associated equipment as well as their installations shall be in accordance with the latest engineering practice.

## **7.0 GENERAL DESIGN & CONSTRUCTIONAL FEATURES OF MECHANICAL EQUIPMENT**

### **7.1 Loading and Stresses**

- 7.1.1 All mechanical equipment shall be efficient in design for ease of erection, installation & maintenance.
- 7.1.2 The factor of safety for any part of the lift must not be less than 5 but higher factor shall be adopted for the parts specified in the relevant IS/ IEC.
- 7.1.3 Loads and their combination thereof and maximum permissible stresses shall be as per relevant IS/ IEC specifications.

### **7.2 Material of Construction**

- 7.2.1 All materials of construction used for the lift shall conform to the relevant IS Standards and codes of practices or equivalent IEC.
- 7.2.2 All equipment enclosures shall preferably be of cast aluminium.
- 7.2.3 All external bolts and nuts including stay bolts up to 8 mm dia shall be of stainless steel and for sizes above shall be of M.S. zinc passivated.
- 7.2.4 Name plates on equipment shall be made of stainless steel with the letters embossed on them.
- 7.2.5 All pulleys shall be anti-spark type.
- 7.2.6 Exposed copper & copper alloys are not permitted to be used.

### **7.3 Lift Machine**

The machine shall be of the single wrap traction type and shall include the driving motor, electromechanical brake, steel worm, bronze gear, steel sheave shaft and sheaves etc. mounted on a single base plate. The worm shaft shall be provided with ball bearings to take the end thrust. Roller bearings shall be provided for sheave shaft to ensure alignment and long bearing life. The driving sheave shall be helically grooved to ensure proper traction and minimize rope wear. Adequate arrangement for lubrication shall be provided for all bearings from single application point and oil filled worm gear.

### **7.4 Guides and Fixtures**

Rigid guides of steel construction of sufficient strength, round section or 'T' section type with machined working surface shall be used for guiding lift car and counter-weight throughout their travel.

Guides of 'T' section shall be held rigidly to their fastenings by through bolts or by clips to restrict torsion. These shall be so jointed and fixed to their brackets that the guides

shall not deflect by more than 3 mm laterally under normal operation. Guides and their fixing shall withstand application of safety gear when stopping a fully-loaded car or counterweight. Guide bracket shall be fixed to walls, plate inserts or stair stringer by bolts or bolted to the building or structural steel work.

**7.5 Buffers**

Buffers shall be installed under the lift car and top of the car and counterweight in accordance with requirement of IS: 4666 / IS 14665 Part 2 Sec 12 or as per relevant IEC. These shall be complete with steel mounting members.

**7.6 Lift Frame**

The car shall be carried in steel car frame sufficiently rigid to withstand the operation of the safety gear without permanent deformation to the car frame. The deflection of the cross head members and the members carrying the platform shall not exceed 1/1000 of the span under static conditions with the contact load evenly distributed over the platform. At least 4 sets of roller guides shall be provided, two at the top and two at the bottom of the car frame. Necessary Facia Cover Plates for supporting the door frames on various landings shall be provided. Necessary safety devices shall be mounted underneath the car platform.

**7.7 Lift Car**

7.7.1 The car shall be of rigid construction for use in a chemical plant. The fittings inside the car should be properly protected against damage by tools or pipes, etc. carried by Workmen and by the corrosive action of chemical dusts and vapours.

7.7.2 Lift car shall be provided with roof, gates and car enclosure and the dimensions shall be as per IS: 4666 / IS 14665 Part 2 Sec 12 or as per relevant IEC.

7.7.3 Lift car shall have a 20 Watts fluorescent fixture/LED suitable for hazardous area classification.

**7.8 Car Enclosure**

The enclosure and door shall be of Stainless Steel 2.0 mm thick. Doors shall be able to withstand thrust of 35 Kg. applied normally at any point without any permanent deformation. Car enclosure shall be rigidly secured to the car floor & car frame.

**7.9 Car Platform**

Car platform shall be of steel construction suitable for specified contract load. The flooring shall be of 5 mm thick aluminium chequered plate bolted to the platform members. Car platform should have an apron of sufficient depth so as to prevent any object being trapped between car platform and lift landing.

**7.10 Emergency Exit**

A hinged cover not less than 600 mm x 450 mm opening upwards shall be provided in the car roof to serve as an emergency exit. The emergency exit shall be provided with an electrical interlock which will prevent the lift from being operated when the emergency exit is left open.



**TECHNICAL SPECIFICATION –  
PASSENGER CUM GOODS LIFT (TS-8206)**

TS-8206

0

DOCUMENT NO.

REV.

SHEET 8 OF 14

**7.11 Load Plate**

A plate showing the lift capacity shall be fitted inside the car. The load-plate shall indicate in a tabular form various combinations for number of passengers and goods loads permissible for safe operation in compliance with the applicable lift act.

**7.12 Car Gate**

The car gate shall be collapsible door and steel painted with anticorrosive paint. The gate shall be hung on an aluminium track by Nylon rollers and guided in a finished groove sill on the car platform. The hangers and tracks for doors together with their fixtures shall be of adequate strength and rigidity. Means shall be provided to prevent the collapsible door from jumping the tracks or jamming. Suitable stops shall be provided to prevent the hanger carriage from leaving the end of the track. The distance between the collapsible car door & landing door shall be Min. 145 mm.

**7.13 Hoist way Doors**

The supplier shall furnish and install at each landing, steel swing doors with 2 mm thick & secured to give a clear opening of 900 mm width x 2000 mm height complete with door frames, hinges, handles, vision panels and door closures. The door shall be spring closing type.

**7.14 Car Safety and Governor**

Car safety device shall be provided to stop the car in case of excessive descending speed. The safety devices shall be operated by a centrifugal speed governor located at the top of the hoistway and connected to the governor through a continuous steel rope. The tension frame of the governor part at the bottom of the hoistway shall have stainless steel shaft. Suitable means shall be provided to cut-off power to the motor and apply the brake on application of the safety device. The rollers of the safety devices shall be of stainless steel.

**7.15 Counterweight**

The counter weight shall be provided for smooth operation. This shall be constructed of multiple sections of cast iron weighted with lead discs and two tie rods passing through holes in all sections. Two tie rods shall be provided for safety reasons. The counterweights shall withstand the effect of buffer impact. Renewable guide shoes shall be provided at the top and bottom of the weight. Screen protection for the counter weights shall also be provided.

**7.16 Sheaves and Beams**

Car and counter weight sheaves shall be provided as required. The sheaves shall be of cast iron grooved for the hoist ropes, sheaves shall have grease lubricated bearings.

**7.17 Suspension Ropes**

Hoisting ropes and compensating ropes of sufficient length made of galvanised traction steel shall be provided in the lift. They shall have PVC sleeving. Two ropes, independent of one another shall be used for suspension. Suspension ropes shall be in accordance with IS: 2365.

**7.18 Cat Ladder**

A cat ladder shall be provided throughout the length of the lift shaft for facilitating the escape of person trapped inside the lift car. The cat ladder shall be made of either stainless steel or suitable aluminium alloy. It shall be fixed to the lift well plate inserts or structure.

**8.0 GENERAL DESIGN AND CONSTRUCTIONAL FEATURES OF ELECTRICAL EQUIPMENT**

**8.1 Main Switch**

One No. heavy duty switch fuse unit rated for 415 V, 63 A shall be provided by the lift supplier in the Control Panel/Sub-control Panel to receive the incoming supply.

**8.2 Lift Motor**

Motor for use in the lift shall be as per IS: 8151 and suitable for lift duty. It shall be of squirrel cage design, class F insulated (temp. rise limited to that of Class B), totally enclosed fan cooled type, having an enclosure of IP55 as per IS/IEC60034-5. The temperature rise of the motor through-out the working range shall not exceed the value specified in IS 12615. The terminal box and cable glands for motor shall be suitable for area classification.

**8.3 Brake**

A Solenoid Operated brake having at least two brake shoes shall be provided. The brake shall be spring applied and electrically released type. This shall be capable of bringing the lift car to smooth stops under variable loads.

Earth fault, short circuit or residual magnetism shall not prevent the brake from being applied when the power supply to the lift motor is interrupted. Means of releasing the brake in emergency case shall be provided.

**8.4 Controller**

A floor mounting cubicle type control panel shall be supplied to control the operation of the lift. The controller shall house the devices for starting, stopping, speed control of the lift motor and automatic application of the brake after the desired operation, operation of the safety devices on power failure. Necessary protective equipment for each electrical equipment and circuits shall be provided. The components as well as their layout shall conform to the relevant ISS/IEC. The controller panel shall be fabricated out of CRCA steel having thickness of 2 mm or more. The doors shall be internally hinged type. The design shall be totally enclosed, dust tight and vermin proof. For dustproof-features neoprene gaskets properly held in positions shall be provided at all jointing surfaces. The panel shall be of adequate size (not less than 1000 mm width x 600 mm depth x 2200 mm height) so that the operating temperature in the panel is within the permissible limits. The controller shall be housed in the machine room without having any ventilation facilities. The entire panel shall be painted with 2 coats of epoxy based paints after suitable chemical treatments.

The main and auxiliary contactors and relays shall be liberally spaced inside the controller. They shall be marked with the designation. The wiring shall be carried out with 2.5 sq.mm solid copper PVC insulated conductors, neatly laid and bunched with PVC bands. They shall be numbered as per IS: 375 / IS 5578 / IS 11353.

A reverse phase relay shall be provided on the controller to protect the lift against phase reversal and phase failure.

A lockable maintenance/service control switch shall be provided. In service position all safety interlocks shall be in circuit whereas in maintenance position safety interlocks shall be by passed so as to carry out maintenance.

For external connections all the power and control wires shall be terminated in the terminal block. For power cable, crimped type Cu lugs shall be supplied. For control cable, pressure clamp type terminal blocks shall be provided. Ferrules shall be provided on all the wires.

#### 8.5 **Car Operating Panel and Hall Stations**

Both shall have heavily zinc plated sheet steel bore with aluminium cover fitted by means of stainless steel screws. A continuous neoprene rubber gasket shall be provided to make the box dust proof. The push button units shall be of reputed make subject to Purchaser's approval.

#### 8.6 **Car & Hoist way Junction Boxes**

The junction boxes shall be of 6 mm thick cast aluminium having neoprene rubber gasket for dust proofing. The size of the junction boxes shall be adequate for the termination of cables as required. The cover fixing arrangement shall be external and the fixing screws shall be of stainless steel.

#### 8.7 **Terminal and Final Limit Switches**

The terminal switches shall be provided to slow down and stop the car automatically at the terminal landings.

The final limit switches shall be provided to automatically cut off the power and apply the brake in case of the car travelling beyond the terminal landings.

All the limit switches shall be of positive action type. The operating arms and rollers shall be of stainless steel. The moving pins shall be made of stainless steel supported on oil-less bronze bushings. The enclosure of the limit switches shall be of cast aluminium provided with neoprene gasket.

#### 8.8 **Car Gate Interlock**

An electrical interlock shall be provided in the car gate to prevent the movement of the car away from a landing unless the car gate is in the closed position. Effective locking devices shall also be provided to prevent the opening of the gate unless the car is on a particular landing.

#### 8.9 **Hoist way Door Interlock**

Each hoist way door shall be provided with an approved interlock to be operated by a retiring cam on the car to prevent the movement of the car away from the landing unless all the doors are closed and locked. The interlocks shall also prevent opening of the doors except at the landing where the car is stopping or has stopped. The retiring arm shall be provided with dust protective covers.



**TECHNICAL SPECIFICATION –  
PASSENGER CUM GOODS LIFT (TS-8206)**

TS-8206

0

DOCUMENT NO.

REV.

SHEET 11 OF 14

**8.10 Door Open Bell**

An industrial bell shall be installed on the car to ring while a landing button is pressed and the car gate is open. The bell shall be for 110 V DC.

**8.11 Car Travelling Cable**

All electrical connections to the car shall be made by means of a multi-core hanging copper conductor flexible cable, one end of which is connected to terminal box fitted above the car, the other to a terminal box fitted in the well at approximately the mid-position. These travelling cables shall conform to B.S.S. 977 having FRLS properties also. All car connections from the controller shall run to the well terminal box. The length of the flexible cable shall be approximately equal to half the lift total travel plus 5 meters so that the car may travel from end to end of the well without subjecting the cable to any strain.

**8.12 Wiring**

From the safety aspect, it is essential that all electric cabling and wiring be carried out in a sound and efficient manner and be in accordance with IS:732.

**8.13 Telephone**

An arrangement for installation of a telephone set inside the lift car shall be provided. This shall include an aluminium cabinet for telephone set having hinged door and flushed with the lift car with proper nameplate on the door.

Necessary leads shall be provided on the travelling cable for this purpose. The LSTK Contractor shall terminate the exchange cables in the machine room. Necessary arrangements shall be provided to receive this. The receiver shall be supplied and installed by the supplier. Necessary terminal block shall be provided in the cabinet for this purpose.

**8.14 D.C. Lighting**

One No. 60 W, 110 V DC lighting fixture shall be provided in lift car for lighting in case of power failure.

**8.15 Earthing**

The metal frame work of the motors, controllers/switchgear, electrical equipment in the car, car metal framework, guide rails & buffers and the electric conduit shall be effectively earthed in accordance with the latest issue of Indian Electricity Rules and IS:3043. The cross-sectional area of the earth conductor in the travelling cable shall be equal to that of the current carrying conductors. All equipment shall be earthed at least by two separate earth conductors.

**9.0 PAINTING**

9.1 All vendor equipment shall be painted with two coats of corrosion resistant epoxy based paint after suitable pretreatment.

9.2 The pre-treatment shall include treatments for removal of dust, scale and other foreign matters, epoxy based primer coating and final painting by spraying.



**TECHNICAL SPECIFICATION –  
PASSENGER CUM GOODS LIFT (TS-8206)**

TS-8206

0

DOCUMENT NO.

REV.

SHEET 12 OF 14

9.3 All fabricated items shall have shop coating of the primer only. Painting shall be carried out at site after their installation. The site painting shall have one coat of corrosion resistant epoxy based primer followed by two coat of epoxy based paint by spraying.

**10.0 TESTS AND INSPECTION**

10.1 All the items shall be routine tested as per relevant Indian Standards in the presence of Purchaser's representative. The supplier shall give a fortnight notice to the owner to enable its representative to be present for these tests.

10.2 In addition all the equipment shall be subject to stage inspection at works.

10.3 These inspections shall, however, not absolve the vendor free from his responsibility for making good any defects which may be noticed subsequently.

**11.0 ERECTION, TESTING AND COMMISSIONING**

11.1 The supplier shall undertake the erection of all equipment in accordance with established practices, in conformity with the statutory regulations and to the entire satisfaction of the owner.

11.2 The supplier shall arrange all the necessary erection, tools and tackles including the supply of erection materials. The manufacturer shall also supply bulk lead lighting fitting inside hoist way to be provided at every 20 metres interval suitable for area classification.

11.3 The supplier shall to obtain the necessary clearance from the statutory authorities for equipment supplies and installation. All necessary drawings and test certificates as required by the authorities shall be furnished. Any modification/ rectification, as required by the authorities shall be carried out.

11.4 Approved tests shall be performed on all equipment to the Owner's entire satisfaction. All the test results shall be recorded and submitted to the owner.

11.5 The entire installation shall be tested to prove the required performance in the presence of Purchaser's representative.

**12.0 SPARES**

12.1 Spares for operation and maintenance

Item wise unit prices of spare parts with recommended quantity shall be quoted along with the equipments as listed in Annexure-I.

12.2 Commissioning Spares

Commissioning spares, as required, shall be supplied with the main equipment. Item wise list of recommended commissioning spares shall be furnished for approval.

12.3 Any other spare parts not specified, but required, shall also be quoted along with the offer.

12.4 All spare parts shall be identical to the parts used in the equipments.



**TECHNICAL SPECIFICATION –  
PASSENGER CUM GOODS LIFT (TS-8206)**

TS-8206

0

DOCUMENT NO.

REV.

SHEET 13 OF 14

**13.0 DRAWINGS AND DOCUMENTS**

13.1 The drawings and documents as per Annexure-II shall be supplied unless otherwise specified.

13.2 All drawings and documents shall have the following descriptions written boldly:

- i) Name of client
- ii) Name of consultant
- iii) Enquiry / order number with plant / project name
- iv) Equipment Code No. and Description

13.3 At the time of handing over of the installation, the supplier shall supply as-built drawings taking into consideration the actual execution carried out.

**14.0 DEVIATIONS**

14.1 Deviations, if any, from this standard shall be clearly indicated in the offer with reasoning.

**ANNEXURE – I**

**DOCUMENTATION FOR PASSENGER CUM GOODS LIFT**

Sl. No.	Description	Documents Required (Y / N)		
		With Bid	For Approval	Final
1.	Specification Sheet, duly completed	N	N	Y
2.	Technical Particulars, duly filled in	N	N	Y
3.	Drawings showing lift well machine room & pits with layout of equipment showing position of various landings	N	Y	Y
4.	Technical & Illustrative literature of all equipment	N	N	Y
5.	Quantity & exact position of all vertical load and horizontal thrust to the supporting structure	N	Y	Y
6.	Details of inserts & openings to be provided in lift shaft, machine room & pits or any other civil detail required	N	Y	Y
7.	Foundation drawing suitable for civil works calculation complete with static & dynamic loads, necessary anchorage & elevation	N	Y	Y
8.	Electrical arrangement of equipment in hoist way	N	Y	Y
9.	Wiring Diagram	N	Y	Y
10.	Schematic Diagram	N	Y	Y
11.	Equipment Detail with make	N	Y	Y
12.	Detailed dimensional drawing of all equipment	N	Y	Y
13.	Type Test Certificates	N	N	Y
14.	Routine Test Certificates	N	N	Y
15.	Operation and maintenance manual	N	N	Y

**Note:**

1. 4 hard copies & 1 soft copy shall be supplied with bid.
2. 4 hard copies & 1 soft copy shall be supplied for approval after order within 4 weeks from the date of LOI.
3. 8 hard copies & 2 soft copies in pen drive/hard disk shall be submitted as final documents prior to despatch of the equipment. These shall be made in sets and supplied in fine plastic coated folder.

Y - Yes, N - No