



building with less than G+14 floors) Or In case of Kothi /Bungalow, where gas pipeline is available outside the premises (where service line is already installed)– TAT-40 days

- Underground gas pipeline available across road : i.e. Where service line has to be laid (Laying of service line up to 20m)–TAT-60 days
- Connection rates in project areas; in High Rise segment (TAT-90 Days) & low-rise segment (TAT-75 Days)
- Maintain new connection tracking on IGL's portal. Providing adequate manpower, minimum 2 no's each such as data entry operator, customer care executive etc. for data logging like new connection request & GI tracking, attending complaints, day to day interaction with customers and residents so that work can be executed within defined time period (TAT) Turn Around Time.
- Providing adequate manpower for carrying out laying for PNG installation for emergency cases as and when required. The TAT period for carrying out such emergency cases are defined in tender document.
- Printable material i.e. RFC book, sticker & safety Guidelines shall be provided by owner. All other printable materials like feasibility report etc. shall be in contractor's scope.
- All size of GI pipes & GI Fittings shall be powder coated before installation and it is in the scope of contractors. Contractor shall submit powder coating procedure to EIC/ Consultants before powder coating of pipes & Fittings.

## **4.0 MATERIAL, MANPOWER EQUIPMENT AND MACHINERY**

### **4.1 Material to be supplied as a free issue material**

Domestic meter, Regulator, Isolation and Appliance valve shall be supplied as a free issue material to the contractor. The contractor shall not use any other material from any other source of supply other than owner's supplied material without any written approval from EIC.

### **4.2 Material/Equipment & machinery to be supplied by contractor**

Contractor shall procure/ purchase Powder GI Pipe & fittings, Brass fittings, Cu pipe/MLC Pipe & fittings, and Reinforced rubber hose with other material which is required to satisfactory completion/safety/statutory of the works as per tender at no extra cost to Owner. The IGL logo shall be marked on the material supplied by contractor. The contractor shall take approval from owner/owner representative for marking on the



material to be procured by contractor before placement of order.

The Contractor shall provide labour, tools (such as Hammer Drill, Piston Drill, Pipe Cutters, Dies for threading, Pipe wrenches, spanners, conversion kits, solder torch, copper tube Cutters, tube benders, lacquering, thinner etc.) in specified numbers, all types of clamps, Plant and equipment necessary for the proper execution of the work. This will include but not limited to list of specialized tools and tackles indicated in Annexure #1.

Special tools shall be required at site for carrying out drilling work in walls other than Brick or RCC (Ex. Granite, Marble, Wooden, Glass Cutting etc.)

The contractor has to ensure the availability of DG sets for continuous power supply. In case the power supply is availed at the site from societies, individual residents, contractor shall settle the claims raised by the electricity providers without any cost implication to OWNER. In case contractor doesn't settle the claims for using the electricity from societies/individual residents, on demand by the providers, OWNER will settle the claims and the same will be deducted from the contractor's bills. The progress of work shall not hamper due to non-availability of power supply.

The contractor has to submit the valid calibration certificate for Pressure gauges.

Contractor shall submit the manufacturer test certificate slab test certificate for all items procured by him for approval before commencing the execution.

No hiring of equipment's, tools and tackles by the contractors is allowed at the site. In case any contractor is found not in possession of enlisted required tools and tackles, penalty will be levied as per the SCC which shall be deducted from the running bills.

#### **4.3 Plant and Equipment**

All vehicular type machinery shall be in good working condition and shall not cause spillage of oil or grease. To avoid damage to paved surfaces, the contractor will provide pads of timber or thick rubber under the hydraulic feet or outriggers of machinery.

#### **4.4 Sealant, Grout**

The contractor shall be responsible to arrange the supply of any consumable sealant or ready mix grout material required for restoration of holes. The sealant/grout supplied by the contractor shall be compatible with the area to be restored/ rectified. No separate payment for the supply of sealant and grout shall be made to the contractor.



#### **4.5 Clamps, Rawal Plugs, Screws and etc.**

The Clamps, Brackets for meter, Rawal Plugs, SS-304 Screws (2" length), Nozzles, etc. shall be approved lot wise by EIC prior to installation. Re-drilling of existing appliance (burners) nozzles is strictly not permitted. The quality of materials procured will be got approved and will be as directed by EIC.

The indicative sketch of the Brackets for Meter, and GI/Copper Pipe Clamps is enclosed with the tender. No separate payment for the supply of Meter Brackets and GI/Copper clamps shall be made to the contractor.

#### **4.6 Consumable Items**

- Special Consumables such as Teflon Tapes, solder wire, flux, lacquer, thinner shall be supplied by the contractor and are included in installation rates.
- These consumables shall be of reputed make companies and required grades/class

#### **4.7 Other Materials**

The contractor shall supply the following items where required:

- 4.7.1 All materials required for work, NPT threading, copper pipe jointing, testing etc.
- 4.7.2 All signs, barricades, lights and protective equipment.
- 4.7.3 All material required for working at higher floor levels (i.e., scaffolding, Ladder, Safety Belts, Self-Locking Safety Harness Belts etc.).
- 4.7.4 Special consumable such as grease for maintenance of domestic appliances, all paints for painting of GI Pipes, Consumables such as Teflon Tapes, Solder-wire, Flux, Lacquer, Thinner, Petrol, Diesel, Fuels and Oils required are to be supplied by the contractor and are included for within the rates.
- 4.7.5 All minor items not expressly mentioned in the contract but which are necessary for the satisfactory completion and performance of the work under this contract.

#### **4.8 Acquisition, Receipt and Storage of Materials**

The Contractor shall collect Domestic meter, Regulators, Isolation and Appliance Valve from Owner's designated stores in between the hours to be advised by the EIC.



The contractor shall carry out assessment of material required for GI/Copper/MLC installation in allocated area. After approval from Owner, contractor shall place order for purchasing of GI Pipes & fittings, Copper pipes/MLC Pipes & fittings, Brass Fittings, and Reinforced Rubber hose (Technical specifications attached in the tender document) to anyone of approved vendors as per the list attached in the tender document. The contractor shall also ensure that the QCT for these materials shall be approved before the start of production activity. Once QCT is approved, contractor shall forward inspection call to the Owner depending upon the material requirement at the site. The inspection of these materials shall be carried out by Owner appointed third party inspection agency. It is contractor's responsibility for document submission, arranging dispatch clearance, handling, loading, transportation and unloading of these materials at their own respective store.

Any other activity not mentioned/covered, explicitly, but otherwise required for satisfactory completion/operation/safety/statutory/maintenance of works shall also be covered under scope of work and has to be completed by contractor within specified schedule at no extra cost to Owner. The Contractor shall carry free issue material in such a manner as to preclude damage using transportation and handling.

The Contractor shall physically examine all materials at the time of acceptance the material in store and notify the EIC immediately of any damage or defect noticed by the Contractor. The IGL representative shall duly note any damage or defect in a site instruction book and both parties shall counter sign the entry.

Any damage not so recorded will be deemed not to have existed at the time of acceptance of material in store by the Contractor and the cost of repair or replacement or rectification shall be borne by the Contractor.

All materials shall be stored in contractor's stores near site in such a manner so as to prevent any damage to the materials from scratching, gouging, indentation, excessive heat or by contact with any sharp objects or chemicals.

The Contractor shall be required to submit inventory details of materials every month.

The Contractor shall maintain log book at their respective stores stating issue and availability of free issue material at a given day. Further, it is mandatory that the contractor is required to undertake and submit inventory details of free issue and purchased materials on monthly basis to Owner/ Owner's representative as per the approved format of the owner. The inventory details shall be in correlation with the Daily progress chart and material reconciliation sheet.



Material reconciliation indicating issue of material, consumptions and defective material shall be submitted on every three months basis.

## **5.0 ISSUE OF WORK INSTRUCTIONS**

- The contractor will be required to carry out GI installation in the areas where MDPE laying is under progress. However, testing of GI installation shall be done in conjunction with laying of MDPE Service Lines to respective premises. A general scheme of distribution to domestic consumer is indicated in enclosed drawing No: 15792-20-05-02 for reference. It may vary in case of individual and multi storied flats.
- All skilled personnel like jointers, conversion technicians will be approved and certified by Site In-charge. The technicians who will carry out joining of copper material and conversions will undergo a test by Owner. Those who clear the test will be issued identity cards duly signed by Site In-charge. These technicians shall be only authorized to take up respective jobs. In case it is found that contractor personnel other than authorized are carrying out these works, applicable penalty will be levied to the contractor as per contract.
- The rates to be quoted by contractor shall be inclusive of all preparatory/bye works, platform materials, labour, supervision, tools, taxes, duties, levies, salaries, wages, overheads, profits, escalations, fluctuations in exchange rates and no change in the rates shall be admissible during tenancy of the contract.
- The schedule of items of GI/Cu/MLC installations have been described in brief and shall be held to be completed in all respect including safety requirements as per Standard Specification of HSE, tests, inspection, QA/QC works, enabling and sundry works. The payment shall be made against completed and measured works only. No extra works whatsoever shall be considered in execution of these items.

## **6.0 PROGRESS OF WORK**

The contractor shall proceed with the work under the contract with due expedition and without delay. Contractor shall assess the material requirement of the allotted area and submit the schedule plan for execution & purchasing before start of actual work.

The EIC may direct in what order and at what time the various stages or parts of the work under the contract shall be performed. Weekly progress reports shall be submitted in the formats approved by Owner, indicating broadly the laying, testing, RFC, conversions and extra piping.



## **7.0 WORK SHEETS**

- The quantities of GI/Cu/MLC pipe and other details will be checked by Owner's site engineer and the same shall be incorporated in RFC cards, signed & dated as certified, on site. The cards will then be approved by the EIC.
- Measurement sheets shall be prepared based on the RFC cards and checked and certified by the site engineers for billing purpose.
- If measurement sheets submitted are illegible, incomplete or incorrectly booked they will be returned to the contractor.

## **8.0 PERMISSIONS / APPROVALS**

- Contractor shall be responsible for obtaining permissions from society management, RWA, individual residents and any other concerned authority, if required, for completion of the work. Contractor must take the prior appointment from the residents for carrying out the work.
- The contractor shall work in close consultation/coordination with the EIC.
- The contractor shall not sign/execute any agreement and/or undertaking on any such documents which amounts to be under taken by Owner. The same shall only be signed and executed by Owner; however, the contractor shall also liaison and coordinates for the same.
- The necessary coordination, liaison and arrangements for inspection and approval shall be the contractor's responsibility. Inspection and acceptance of the work by authority shall not relieve the contractor from any of these responsibilities under this contract. The contractor shall plan the execution of work in such a manner so that all the registered customers are attended in phased manner. However, it is the contractor's responsibility to fix a firm appointment with the consumer for carrying out the work.
- A log book/job card for such appointments with Consumer/any other agencies shall be maintained and the schedule/appointment once taken shall be adhered to by the contractor. PMC/EIC shall review the records every week. The contractor shall submit the detailed list of RFC/Conversions and balance work on Registrations at least once a week as per approved format.
- The contractor is also required to obtain a "Labour License" from the Assistant Labour Commissioner of respective Administration/Central Govt.
- It will be the contractor's responsibility to familiarize himself and comply with,



- any other local rules, regulations or statutory requirements applicable to the work.
- The contractor has to take responsibility of the action of supervisors, plumbers and helpers provided by him.

## **9.0 REFERENCE SPECIFICATION, CODES AND STANDARDS**

The contractor shall carry out the work in accordance with this specification, Owner's Engineering Standards: ASME B31.8 - Gas Transmission and Distribution Piping Systems; Oil Indian Safety Directorate Norms (OISD), the American Gas Association Document - Purging Principles and Practice and PNGRB Guidelines.

If the contractor find any discrepancy, ambiguity or conflict in between any of the Standards and the contract documents, then this should be promptly referred to the Engineer -in-Charge (EIC) for his decision, which shall be considered binding on the contractor.

## **10.0 RIGHT-OF-USE SERVEY AND MARKING**

The route of the pipeline to be installed shall be decided with consent of the consumer and Site Engineer/EIC. Contractor must ensure that the persons/workers/supervisors/working at site shall have proper identity cards prior to entering the premises of the consumer.

No temporary or permanent deposit of any kind of material resulting from the work shall be permitted in the approach or any other position, which might hinder the passage and/ or natural water drainage, or any area where there is objection from consumer.

The contractor shall obtain necessary permissions from land Owners and tenants and shall be responsible for all damages caused by the construction and use of such approaches, pavements, gardens, rooms, walls, roof etc., at no extra cost to Owner.

Owner/Consultant and the contractor at each premises or housing colony to be supplied with gas will conduct a joint survey. The survey record will note Customer details, the potential gas supply points and proposed meter positions and estimates of material quantities. The contractor's representatives will make as sketch of the agreed pipe routes, if necessary.

The contractor will be responsible for contacting the Customer and making the necessary arrangements for access and appointments to carry out the work. Owner will not be responsible for any time lost due to failed appointments or disputes with Customer.

The contractor shall confine its operations within limits of the Right in use. The contractor shall restore any damage to property outside ROU.

The contractor shall also carry-out all necessary preparatory work if needed to permit





the passage of men and equipment. Lights, Curbs, signs shall be provided wherever and/or required by the Owner necessary to protect the public.

## **11.0 PROTECTION OF STRUCTURES AND UTILITIES**

The contractor shall at his own cost, support and protect all buildings, walls, fences or other structures and all utilities and property which may, unless so protected, be damaged as a result of the execution of the works. He shall also comply with the requirements in the specification relating to protective measures applicable to particular operations or kind of work.

While painting, contractor must take care of the consumer premises while carrying out the job such as spillage on floor, walls, ceilings, sun shades etc. If the same does occur, the contractor has to immediately make things to original.

## **12.0 POWDER COATED GI AND COPPER/MLC ABOVE GROUND SERVICE PIPE**

The powder coated GI service pipe installation work includes all work necessary to connect from the PE/GI transition fitting on the down-stream of the PE service, to the Customers appliance, including the installation of regulator, valves, fittings, meters, clamps etc. The contractor shall be required to provide all equipment, tools and materials necessary to execute the work in an efficient and effective manner. Along with ladders, scaffolding pipe, dies, tripods, vices, fittings and Teflon tape, drills for concrete and other masonry, drills for timber, Granite, Marble Stones and laminated surfaces inside Customers property, bending tools, clamps, sleeves to facilitate the pipe passing through floors and walls, paint for marking etc.

All powder coated GI risers at the outside of buildings shall be fully supported to carry the weight of piping. A flanged foot or similar device, capable of supporting the total weight of the riser, shall support risers. The riser shall be installed in a vertical line from its point of support to its highest point with a minimum of changes in direction. The threading of GI pipe shall be NPT and conforming to ANSI B 1.20.1

Contractor has to supply different types/sizes of powder coated clamps (Mild Steel) for fixing GI pipes suiting to the site conditions. The detailed cross sectional of GI Pipe Clamps/Meter brackets are as per Drawing No. 15792-20-05-05;

All riser and lateral pipe shall be clamped to the building at intervals not exceeding 1.5 mtrs. Maximum distance between clamps shall be 1.0 - 1.5m when pipe goes to the straight, if any tee or fittings lies in between the pipe then clamp shall be placed 150 mm far away from center line of fittings at every sides. However, the same may be changed as per site conditions/as directed by EIC. Minimum gap between pipe & wall shall be 25 mm. The joints/ fittings of the GI installation shall be painted only after carrying out testing of the installation.

Where pipe passes through the balcony and the surface is slightly elevated around the service pipe or its surrounding sleeve to prevent the accumulation of water at that point.





Where a short piece of sleeve is used around the gas pipe, the sleeve should be embedded in the concrete with a mix of mortar and the void between the pipe and sleeve filled with a suitable sealant. The sealant should be beveled such as to prevent an accumulation of water. Supply of clamps for all sizes of the GI pipes is in contractor's scope. Contractor has to take prior approval for design/types of clamps, paintings etc. Pipe shall preferably be entered into building above ground and remain in a ventilated location. The location for entry shall be such that it can be easily routed to the usage points by the shortest practicable route.

## 12.1 NON LMC

Non LMC GI Pipe shall be defined as the GI pipe installed from transition fitting to lateral isolation valves.

**Regulator piece:** Regulator Piece: Powder coated GI pipe of 1/2" dia installed of length 1.5m from transition fitting up to inlet of regulator. Its length may vary as per site situation subject to prior approval from Site In-Charge or as per instruction of EIC. The Laying of GI Pipe from the transition fittings to regulators shall be payable in the numbers as per SOR item no.11.1

- **Riser for Bungalow /Apartments having floors up to G+3:** Powder coated GI riser pipe of 1/2" dia shall be installed from regulator isolation valve to lateral isolation valve for G+3 Apt and Individual kothi /Bungalow. Refer Drawing No. 15792-20-05-02.
- **Riser for Bungalow/Apartments having floors more than G+3:** Powder coated GI riser pipe of 3/4" dia shall be installed from regular isolation valve to lateral isolation valve for Apt and Individual Kothi/Bungalow having floors more than G+3. Drawing No. 15792-20-05-03

## 12.2 LMC

LMC GI/CU/MLC pipe shall be defined as the GI pipe installed from lateral isolation valve to appliance valve.

- **PNG CONNECTIONS IN PROJECT AREA**

Supply and installations from riser (lateral isolation valve)-. The cumulative length of 1/2" dia powder coated GI pipe within 2m & Cu/MLC pipe within 2m or (GI+CU/MLC) within 4m after lateral isolation valve up to appliance valve along with installation of meter. Additional quantity above 4 meter (GI+CU/MLC) shall be payable only in case, if cumulative length exceeds 4 m. payment against additional length of (GI/Cu/MLC) shall be against item 13 of SOR.

- **PNG CONNECTIONS IN O&M AREA (ON EXISTING RISER)**

Supply and installations from existing riser- The cumulative length of 1/2" dia.



powder coated GI Pipe within 2 m & Cu/MLC pipe within 2m or (GI+CU/MLC) within 4 m after lateral isolation valve up to appliance along with installation of meter. Additional quantity above 4 meter (GI+CU/MLC) shall be payable only in case if cumulative length exceeds 4 m. Payment against additional length of (GI/CU/MLC) shall be against item 13 of SOR. This SOR is applicable only if the riser is commissioned by other contractor or riser is commissioned by same contractor six month ago.

The GI/Cu/brass fittings shall not be counted separately & shall be measured along with GI & Cu/MLC pipe.

Except Meter, Regulator, Isolation and appliance valve, Contractor shall procure all other materials (i.e. Pipe, fittings, clamps etc.) as per attached specification for installation and to the entire satisfaction of EIC/consultant.

The contractor shall also ensure that gas supply shall not be provided to the customer in any Concealed Piping

The Copper/MLC service pipe installation work includes all work necessary to connect downstream of the meter to the Customers appliances. The contractor shall be required to provide all equipment, tools and materials necessary to execute the work in an efficient and effective manner. Along with these, he will be required to provide ladders, scaffolding pipe, drills for concrete and other masonry, special drills for timber, Granite, Marble Stones and laminated surfaces inside Customers property, bending tools, sleeves to facilitate the pipe passing through floors and walls, etc. Copper pipes & fittings shall be provided by Contractor.

During installation the Copper pipe is to be cut to proper length with tube Cutter, the burrs removed with a file, cleaning of outside surface of pipe & inside surface of fitting, applying flux to the tube and fitting around the outer/inner ends, inserting the tube in to the fitting, applying heat to the assembled joints using conventional blow torch to melt solder wire. Contractor ensure that jointing of Cu pipe & Fittings shall be done by skilled manpower.

**Or**

During installation, the MLC pipe is to be cut to proper length with pipe Cutter, correct the ovality of pipe end with a plastic reamer, cleaning of inside surface of pipe & outside surface of fitting, put the fitting nut over the pipe and slide the compression ring over the pipe. Make sure that the mouth of the nut and pipe face in same direction. Push the fitting insert into the pipe up to shoulder and use the spanner to tighten it up completely. Contractor shall ensure that jointing of MLC pipe & Fittings shall be done by skilled manpower.

Contractor has to supply different types/sizes of approved clamps (PE 80/PVC) for