

**TECHNICAL SPECIFICATION  
OF  
FRP CANOPY FOR FILTRATION AND PRESSURE REDUCTION SKID**

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NAME OF COMPANY	GUJARAT GAS LTD.	
	NAME	SIGN & DATE
Technical Committee (PRI)		
Approved By		

## Table of Contents

1.0	SCOPE.....	1
2.0	DEFINITIONS.....	1
3.0	FIBRE REINFORCED CANOPY.....	2
4.0	NAME PLATE .....	6
5.0	TRANSPORTING & HANDLING .....	7

## 1.0 SCOPE

Gujarat Gas Limited is in business of distributing natural gas to industrial, domestic and CNG station in various cities across Gujarat & Union Territory of DNH. For supply to Domestic customers, Gujarat Gas Limited procures Canopy for Skid fabricated with FRP sheet and installed them in various cities.

This specification covers general requirements of FRP Sheet Canopy for Pressure regulating, Metering and filtration skid used in gas pipeline network.

Protecting canopy is to be provided to protect the skid against the ingress of water and foreign particles. Canopy shall be constructed with durable, non-corrosive and non-inflammable materials and shall have adequate strength so that it should not get damaged/deformed during the transportation/handing/installation.

## 2.0 DEFINITIONS

In the Bid / Contract (as hereinafter defined) the following words and expressions shall have the meanings hereby assigned to them except where the context otherwise requires.

- a) The **"GGL"** or **"Company"** or **"Owner"** shall mean GUJARAT GAS LIMITED (GGL), incorporated under company's Act 1956 having its registered office at 3rd Floor, Block No. 15, Udyog Bhavan, Sector-11, Gandhinagar - 382010, Gujarat, hereinafter mentioned as **"OWNER"** which expression shall, unless repugnant to the context or meaning or meaning thereof, include all its successors, administrators, executors and assigns.
- b) The **"Bid"** shall mean the Bid submitted by the CONTRACTOR for acceptance by the GGL. The **"Contract"** shall mean the agreement and all other documents between the company and the contractor for providing the services mentioned herein.
- c) The **"Vendor"** shall mean the person or persons, firm or Company whose Bid has been accepted by GGL
- d) The **"Supervisor" OR "work in charge"** shall mean the person deployed by the contractor for control & supervision of the work of his work force, as per the Scope of work mentioned and to receive instructions from OWNER's Engineer-In-Charge or his representative.
- e) The **"GGL Engineer-In-Charge"** or **"GGL's representative"** shall mean the person designated as such by the Gujarat Gas Limited and shall include his authorized nominee or agent, provided however that the GGL's Representative to be so designated by GGL may be one person for certain aspects of this agreement and another person for other aspects of work covered by this Bid / Contract.
- f) **"Stores"** shall mean the Companies Stores located at various location of Gujarat.



- g) The "**Specification**" shall mean all directions, the various technical specifications, provisions attached and referred to in the Bid documents which pertain to the method and manner of performing the work or works to the quantities and qualities of the work or works and the materials to be furnished under the contract or works or works as may be amplified or modified by the COMPANY during the performance of Contract in order to provide the unforeseen conditions or in the best interests of the work or works. It shall also include the latest edition of relevant standard specifications including all addenda / corrigenda published before entering into the contract.
- h) "**Guarantee**" shall mean the period and other conditions governing the warranty / guarantee in respect of the work as detailed in section hereunder.
- i) "**HSE**" shall mean Health, Safety & Environment.
- j) "**GGL's Premises**" or "**Owner's Premises**" shall mean company's premise or its customer's premises where work is to be executed.

### 3.0 FIBRE REINFORCED CANOPY

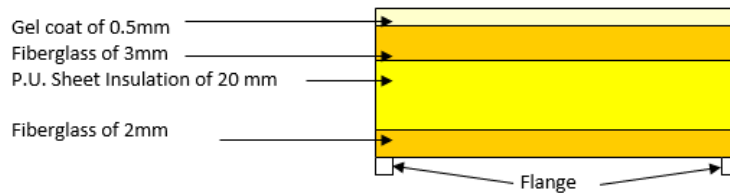
- The canopy for the unit shall be a fibre reinforced construction (25mm thick) & with base dimensions to suit with the fabricated module. The canopy shall be reinforced/ribbed wherever necessary, to provide adequate strength, particularly at the base to ensure that it is sufficiently rigid.
- Material used for making FRP Canopy shall be as below-

The composition for manufacturing Fiberglass Canopy Structure contains fiberglass, unsaturated chemicals (Gel Coat, Resin and MEKP) and high-density Polyurethane foam as insulation

- |                                |                                             |
|--------------------------------|---------------------------------------------|
| 1. Gel Coat                    | - UV protection layer (ISO-PNG)             |
| 2. Fiberglass                  | - Fiber glass roving/ CSM (Chop strand Mat) |
| 3. Unsaturated Polyester Resin | - Fire resistant/ Retardant Resin           |
| 4. Insulation Material         | - Polyurethane sheet                        |

- FRP Canopy sheet shall contain following layers-

1st Layer	Gel Coat of 0.5 mm thickness. Gel coat with UV protection layer (ISO-PNG) of 0.5 mm shall be provided on the FRP sheet. Gel coat shall be provided on one side of the FRP sheet. Gel coated face shall be kept on outer surface of the canopy
2nd Layer	FRP of thickness 3mm - Fiberglass mixed with MEKP and Resin. At this stage the Fiberglass will be sprayed at 3 mm thick.
3rd Layer	Insulation of Polyurethane Sheet of 20 mm thick
4th Layer	FRP of thickness 2mm - Fiberglass mixed with MEKP and Resin. At this stage the Fiberglass will be sprayed at 2 mm thick.



- Flange area thickness will be 4 – 5mm.
- All the joints are connected with nuts/bolts of 5/16" size and 2" long as well as anchor bolts of 3/8" size and 2" long and silicon sealants. Outside joints are filled with Silicon Sealant. Doors are fitted with bolts and nuts.
- Canopy shall have free ventilation of at least 5% of the surface area of the entire area.
- Canopy doors shall be foldable type with Aldrop type locking system.
- Door shall open fully on either sides and shall be lockable from the outside by padlocks. Supply of all locks is in the scope of supplier.
- Canopy shall have slope provided on the top of the roof in order to avoid any water accumulation on top of it.
- Cut-out should be provided on the panel to have access of the meter as well as the reading of the PG/DPG/TG
- Vendor shall submit the GAD for approval to GGL representative.
- Canopy shall have vent & drain pipe provision.
- Canopy shall have hooks of adequate strength at the base frame of the skid in order to facilitate the lifting and convenient handling of the Skid.
- Lifting rods of adequate strength shall be provided along with the skid to facilitate easy handling of the skid, and lugs should place at locations such that it should not damage the cabinet during the loading and unloading of the skid.
- In case screws are used on the cabinet, all the sharp points should be adequately filed and smoothed.
- Surface for the canopy shall be smooth and dent free.
- Inlet/outlet pipes holes shall be positioned accurately with minimum gap between pipe and canopy.
- All accessories to be provided of SS-304 material (Hinges, Locks, Stud, Nuts, Handles etc.)
- All outer locks, Handles to be provided at man working height.
- Square sheet to close the cut-outs shall be provided at all the opening for the pipe (inlet, outlet, drain, vent etc.)
- Size of the opening in the canopy shall be such that spool with flange shall be easily inserted.
- Dimensions to suits with different capacity and makes of FML skid, a sample of which shall be made available.
- The FRP sheet material shall be silver (RAL 7001) in colour.
- The outside colour of canopy shall be Silver (RAL 7001). Internal colouring can be done with Synthetic Paint of standard manufacturers.
- The FRP grade used for Manufacturing of Canopy should have fire resistant properties and should be able to withstand fire upto 90 degree.
- Canopy dimensions shall be decided as per the GAD of GGL.
- Lifting rods of adequate strength shall be provided along with the skid to facilitate easy handling of the skid, and lugs should place at locations such that it should not damage the cabinet during the loading and unloading of the skid.
- Canopy material shall have weather proof resins and shall be self-pigmented.
- No smoking board & High Pressure Natural Gas Board shall be provided on front and back side.

## Dos & Don'ts Board – Back Side

### ઔદ્યોગિક એકમો માટેના નેચરલ ગેસ ઈન્સ્ટોલેશન સુરક્ષા સૂચનો 'આટલું કરો' અને 'આટલું ના કરો'



#### આટલું કરો :

- (૧) નેચરલ ગેસ ઈન્સ્ટોલેશન અને ઈક્વિપમેન્ટ્સ તાલીમ પામેલ અને અધિકૃત વ્યક્તિ દ્વારા જ સંચાલિત થવા જોઈએ.
- (૨) નેચરલ ગેસ પાઈપલાઈન અને ઈક્વિપમેન્ટ્સને અન્ય પાઈપલાઈન/કેમિકલથી દૂર રાખો. તેના પર કોઈ બાહ્ય ભારણ ન થાય તે જુઓ.
- (૩) રેગ્યુલેટરની અપ સ્ટ્રીમ અને ડાઉન સ્ટ્રીમમાં નેચરલ ગેસના દબાણમાં, નિયત દબાણ કરતાં નોંધપાત્ર ફેરફાર જણાય તો 'મેઈન શટ ઓફ' વાલ્વ / બર્નર બંધ કરો અને ગુજરાત ગેસને જાણ કરો.
- (૪) નેચરલ ગેસ ઈન્સ્ટોલેશન/ઈક્વિપમેન્ટ્સ વ્યવસ્થિત કાર્ય ન કરતા હોય અથવા ગેસ લીકેજ થતું જણાય તો ગુજરાત ગેસને તુરંત જાણ કરો અને મેઈન શટ-ઓફ વાલ્વ બંધ કરો.
- (૫) નેચરલ ગેસ પાઈપલાઈન અથવા ઈક્વિપમેન્ટ્સમાં કોઈ ફેરફાર કરાવો હોય અથવા આસપાસ જો કોઈ ફેરફાર/નિર્માણ કામ કરવાનું હોય તો ગુજરાત ગેસનો સંપર્ક કરો.
- (૬) તમારા પરિસરમાં કોઈ પણ સ્રોતથી આગ લાગી હોય કે જે નેચરલ ગેસ ઈન્સ્ટોલેશન માટે જોખમી હોય તો મેઈન શટ ઓફ વાલ્વ બંધ કરો અને ગુજરાત ગેસને તુરંત જાણ કરો.
- (૭) જમીનની નીચે આવેલી નેચરલ ગેસ પાઈપલાઈન અથવા તેની નજીક ખોદકામ કરતાં પહેલાં પાઈપલાઈનને નુકશાન થતું બચાવવા માટે સંપર્ક કરો.
- (૮) નેચરલ ગેસ ઈક્વિપમેન્ટ્સ અને ઈન્સ્ટોલેશન પાસે ડીસીપ ફાયર એક્સ્ટીંગ્યુશર રાખો અને ચેતવણીનું બોર્ડ મૂકો.
- (૯) નેચરલ ગેસ ઈન્સ્ટોલેશનની સ્વચ્છતા જાળવો.
- (૧૦) નેચરલ ગેસ ઈન્સ્ટોલેશન તરફ જતા માર્ગને અવરોધ મુક્ત રાખો.
- (૧૧) કટોકટી/સંકટ ના સમયે વિસ્તાર ખાલી કરો.

#### આટલું ના કરો

- (૧) મોબાઈલ ફોનનો ઉપયોગ ન કરો.
- (૨) સળગતી જ્યોતનો ઉપયોગ ન કરો.
- (૩) નેચરલ ગેસ ઈન્સ્ટોલેશનના નાજુક ઈક્વિપમેન્ટ જેવા કે રેગ્યુલેટર, મીટર સેફ્ટી વાલ્વ વગેરેને રીસેટ/રીપ્લેસ/સ્પર્શ અનઅધિકૃત ફેરફાર ન કરો.
- (૪) નેચરલ ગેસ પાઈપલાઈન અને ઈન્સ્ટોલેશનની નજીક કે આસપાસ કોઈ પણ હીટિંગ ઈક્વિપમેન્ટ અથવા ઈલેક્ટ્રિકલ/ઈન્જિન સ્રોત ઈન્સ્ટોલ ન કરો.
- (૫) તમને અપાતા નેચરલ ગેસ પૂરવઠાને બંધ કરવા બાબત પૂર્વે માહિતી ગુજરાત ગેસ તરફથી આપવામાં આવી હોય તો જ્યાં સુધી ગુજરાત ગેસ તરફથી તમને કહેવામાં ના આવે ત્યાં સુધી નેચરલ ગેસ પાઈપલાઈન/વાલ્વ ખોલશો નહિ.
- (૬) નેચરલ ગેસ લીકેજના બનાવમાં કોઈ પણ ઈલેક્ટ્રિકલ સ્વીચ અથવા તણખા-સ્રોત/આગ લાગે તેવી કોઈ વસ્તુ વાપરો નહિ.
- (૭) ગુજરાત ગેસના અધિકૃત અધિકારીની મંજૂરી વિના હયાત નેચરલ ગેસ પાઈપલાઈનને લંબાવશો નહીં/વધારાનું જોડાણ કરશો નહીં.
- (૮) નેચરલ ગેસ પાઈપલાઈન અને ઈન્સ્ટોલેશન નજીક કોઈ પણ વસ્તુ સળગાવો નહીં/ગરમી અથવા તણખા ઉત્પન્ન કરતા ફ્રિજિડેશનનું કાર્ય કરશો નહીં.
- (૯) તમારા પરિસરમાં જમીનની નીચે આવેલી નેચરલ ગેસ પાઈપલાઈનની નજીક કોઈ પણ જાતની યુટિલિટીઝ જેવી કે ઈલેક્ટ્રિકલ કે ટેલિફોન કેબલ અથવા ચેમ્બર્સ અને માળખું ન બનાવો.
- (૧૦) નેચરલ ગેસ ઈન્સ્ટોલેશનની નજીક સળગી ઊઠે તેવા પદાર્થો જેવા કે ડીઝલ, પેટ્રોલ, ઓઈલ જેવા સંગ્રહ ન કરો/ન રાખો.
- (૧૧) નેચરલ ગેસ ઈન્સ્ટોલેશન પાસે કે નજીકમાં કોઈ પણ વાહનના અવરજવરને મંજૂરી ન આપો.
- (૧૨) નેચરલ ગેસ ઈન્સ્ટોલેશનની નજીક ધૂમ્રપાન ન કરો.
- (૧૩) પ્રતિબંધિત વસ્તારમાં અનઅધિકૃત વ્યક્તિને પ્રવેશ ન આપો.

#### આપાતકાલિન ફોન નં.



Sobhagya Advertising Service - GGL Industrial Board : Gujarati : 2(w) x 3(h)\_Feet

## Dos & Don'ts Board – Front Side

# Do's and Don'ts - Natural Gas Installations for Industry



### DO'S

1. Natural Gas Installations and Equipment shall be operated by trained and authorized person only.
2. Keep Natural Gas Pipeline and Equipment free from other pipelines / chemicals. Prevent any external load from acting upon it.
3. If the pressure of Natural Gas at the upstream and downstream of regulator shows considerable variance from the set pressure, close the 'Main Shut Off' valve, burner and inform Gujarat Gas.
4. Inform Gujarat Gas in case of malfunctioning of Natural Gas Installations / Equipment or suspect any gas leakage and close 'Main Shut Off' valve.
5. Consult Gujarat Gas, if any modification / construction work is to be carried out on or near Natural Gas Pipeline or Equipment.
6. In case if fire occurs anywhere in your premises from any sources which is hazardous to Natural Gas installations, close the 'Main Shut Off' valve and Inform Gujarat Gas Immediately.
7. Dial before you Dig (Excavate) on or near underground Natural Gas pipeline to prevent any damage to the pipeline.
8. Install DCP fire extinguisher and caution boards besides Natural Gas Equipment and Installations.
9. Maintain good House keeping around Natural Gas Installations.
10. Keep pathway to Natural Gas installation free of any obstacles.
11. Evacuate area in case of Emergency.

### DON'TS

1. Do not use Mobile Phone.
2. Do not use Naked Flame.
3. Do not reset / replace / touch or temper critical equipment like regulator, meter safety valve etc. on Natural Gas Installations.
4. Do not install any heating equipment or electrical / ignition source near or around Natural Gas Pipeline and Installations.
5. In case of prior information regarding shutdown of Natural Gas supply, which is served to you, do not open Natural Gas pipeline / valves till you receive information from Gujarat Gas.
6. Do not operate any electrical switches or source of spark / fire in case of Natural Gas leakage.
7. Do not make extensions from the existing Natural Gas pipeline without the approval of Gujarat Gas authorised personnel.
8. Do not carry out any burning / fabrication works producing heat / spark near Natural Gas Pipeline and Installations.
9. Do not lay any utilities like electrical or telephone cables or construct chambers and structures closer to Natural Gas Pipeline laid underground in your premises.
10. Do not keep / store inflammables like diesel, petrol, oil etc. near Natural Gas Installations.
11. Do not allow any vehicular movement in proximity of Natural Gas Installations.
12. Do not smoke near Natural Gas Installations.
13. Do not allow unauthorised person in restricted area.

EMERGENCY PHONE NO. :



Banner : 4(w) x 6(h)\_Feet

**GGL LOGO ON LEFT AND RIGHT OF CANOPY**



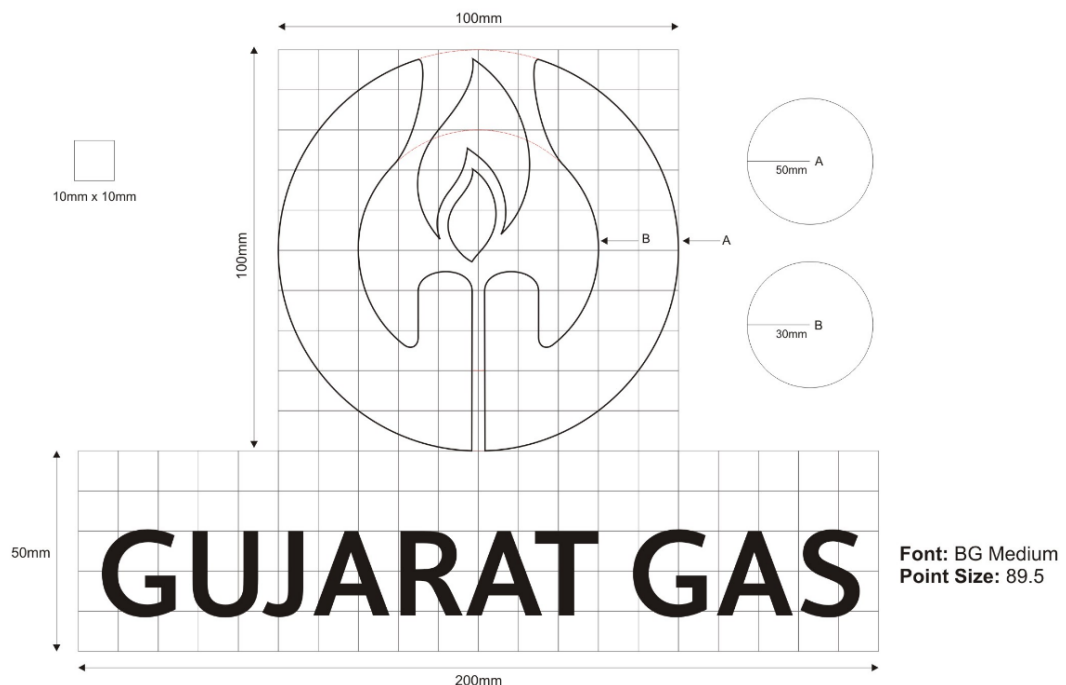
**CMYK Color Scheme**



**Font Color**



# GUJARAT GAS



#### 4.0 NAME PLATE

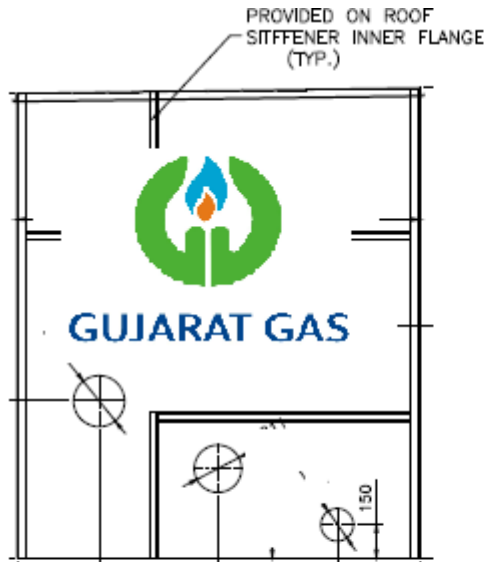
- Canopy shall have name plate fixed on the front door of the cabinet as shown in the drawing.
- Name plate font sizes shall be 1.5 cm in height so that it facilitates the easily reading of the Skid
- Material used for the Name plate shall be non-corrosive in nature.
- Letter shall be engraved on the plate.
- Language to be used for name plate is English(Capital letters)

- Name plate must have information shown in the Name Plate drawing.

## 5.0 TRANSPORTING & HANDLING

- a. Contractor shall be responsible for the safety of Canopy in transit, loading/unloading. Every care shall be exercised in handling Canopy to avoid damage.
- b. The canopy shall be unloaded on timber skids with steadying ropes for by any other approved means.
- a. The canopy received on site shall be jointly checked for any visible damages shall be pointed out immediately at the site and recorded properly. Such defects shall be rectified or repaired to the satisfaction of the TPI/GGL representative entirely at the Contractor's risk and cost. Any canopy which shows sufficient damage to preclude it from being used shall be discarded.





L. H. SIDE VIEW



R. H. SIDE VIEW