

TECHNICAL SPECIFICATION: PREFABRICATED CANOPIES, TO BE PROVIDED AT RETAIL OUTLETS UNDER STATE OF MADHYA PRADESH

Section (01): SCOPE:

Designing, prefabrication off-site, supplying at site and erecting in position Pre-fabricated Canopies for Retail outlets in state of Madhya Pradesh . Canopies shall consist of Pre-Fabricated steel structural framing for primary and secondary construction for roof and columns, Concealed fixed roofing system, interlocking type metal false ceiling system, Gutter and down take assembly complete with all the accessories and assemblies required to construct the canopies at retail outlets of HPCL. All structural shall be supplied in Pre-fabricated condition for field assembly and no hot works shall be done at sites except for minor connections. Works have to be carried out at working retail outlets without causing any major disruption of operations. All safety precautions to be observed strictly.

Assembly and Erection of all the elements of the canopy described as below and providing the foundations for canopy columns are included in the scope of works.

After erection it will be the responsibility of the vendor to submit the stability certificate from a authorised licensed/chartered structural engineer.

Section (02): CANOPY DESCRIPTION

Usage : To provide top cover on driveway / filling bay at
Retail outlets.

Quantity of Identical Canopies : Each canopy may be different

General features of the canopy

Min. Clear Height under the ceiling : 5.50 M

Max Clear Height under the ceiling : 6.00 M

No. of columns : Variable as per HPCL's decision for each site.

Max column Spacing (C/C) : 10.00 M

Max Cantilever (in all directions) : 4.00 M

Acceptable Roof Slope : Front canopy fascia height for all the sides should be between 850 – 950 mm in order to install RVI banding of 800 -900 mm as approved by HPCL site incharge.

Column Type : Structural sections and MS plates conforming IS 2062.

Roof Structure : a) Rafters and Purlins: Made of combination of structural steel conforming to IS 2062 or tubular steel IS 1161.

Special Provisions

- a) Electrical fittings: Installation of Lighting, Speakers etc. To be integrated in the ceilings and suspended from the Roof Structure by the contractor. Fittings shall be supplied by party only. Specification and make / model mentioned under item no **Section 4.G** to be followed. Approx. No. of fittings are: No. of lights - 1 per 10 sqm. Maximum (Norm of 1 per 15 sqm OR 1 per 20 sqm, can also be adopted by Region depending upon the site condition). No. of speaker (supplied by HPCL) - 1 per 100 sqm.
- b) Supplying and carrying out wiring for canopy lighting using 3 x 2.5 sqmm PVC armoured copper cable in PVC conduits. Job also includes supply and fixing in position of 25mm dia PVC heavy duty conduit pipes with joineries for the cables and suitable circuit breakers all Complete.
The lighting scheme for the canopy lights shall be done in such a manner that switching on the alternate light fittings in a row is possible, if required during off-peak Hours. The cable termination shall be done in professional manner using copper lugs of appropriate size at both ends. Cable glands to be used for entry/exit point in panels. Care should be taken to ensure that there is no ingress of insects etc. in the light fittings by ensuring sealing etc. as required. Payment shall be made basis RMT of cable designed and provided for in the canopy.
- c) Fixing of pump spreaders (signages) supplied by HPCL to the Column of the canopies.
- d) Blanking sheet on non illuminated side of the canopy shall be provided using 0.8 mm thick RMP coated sheet of same shade as of false ceiling. The sheet shall be provided in such a manner as to prevent water ingress completely.
- e) The gap between the glow box and the roof shall be covered in such a manner using 0.8 mm RMP coated sheet or using false ceiling material, so that water ingress does not take place.

GENERAL NOTES

1. All columns should be true to plumb and level & canopy should be checked for rectangularity by dropping down plumb from corners and measuring the diagonals or through other methods.
2. The welding should be thoroughly cleaned of all splatter, slag, rust, dirt & other foreign material by using wire brush, sand paper, chipping etc. before painting.
3. The welding shall be in accordance with IS 816 latest edition using ISI marked electrodes (AWS A 5.1 / E6013) of approved make. All welding shall have a minimum thickness of 6 mm unless higher thickness as specified in the drawing. The welding shall be continuous and smooth, maintaining consistent proper thickness without any break or pinholes. The welding should be free from all defects.
4. One coat of primer application should be carried out at workshop & rest of painting jobs to be carried out at site.
5. All gauges & templates necessary for checking MS structure section thickness, plumb, level, ELCO Meter should be made available by the contractor.

6. After erection of canopy & finishing of roofing/gutter job, arrangement shall be made to test for any leaks by spraying of water & blocking of down take pipes.
7. No gas cutting for making holes of any size will be allowed.
8. Cabling job should be carried out in neat & professional manner with PVC/ Plastic clipping arrangement to hold the cable. Same no of Tag block should fixed on either end of cable for proper identification / traceability & as built drawing of single line diagram showing complete details should be submitted along with final bill.
9. Two coats of primer (as specified in painting schedule) shall be applied on inner surfaces of channels /plates before fabrication.

Section (03) : DESIGN CODES :

All the canopies shall be designed in accordance with applicable IS codes for fabrication, physical loading, erection following design loads shall be considered.

- | | | |
|--------------------------|---|---|
| Roof live load | : | 0.75 KN / Sqm. (As per IS 875 Part-2) |
| Wind Speed | : | Min. 150 Km/Hr or As per IS 875 Part 3-1987 (Latest Revision), whichever is higher.
For coastal zones, prone to higher wind velocity, min. Wind speed of 220 Km/Hr or as per IS 875 whichever is Higher.
Necessary roof bracings and structural to be used to stabilise canopy movement and to avoid any deflection. Deflection in any member is not permitted. |
| Collateral Loads | : | 0.10 KN / Sqm |
| Loads for Glow Facia | : | 40 Kg/M all around the canopy. |
| Minimum weight of canopy | : | 30 Kg / Sqm |

Section (04) : DETAILED SPECIFICATIONS OF MATERIALS

4(A) Structural

4. A.1. Primary Framing

Primary Framing shall include columns and rafters. All the elements of the primary framing shall be designed, engineered and supplied to site in factory finished ready to use condition, manufactured out of minimum 240 Mpa hot rolled steel plates and sections conforming to IS 2062:1999 latest edition. All the elements of the roof and column structural shall be supplied with pre-drilled, pre-punched and pre-weld condition and no hot works or fabrication at site shall be allowed. Provision for cable conduiting and down take assembly shall be made. Steel used shall be from SAIL / TISCO / IISCO / VSPL only. Necessary proof of the same shall be submitted.

4. A.2. Secondary Framing

Rafters and purlins shall be of MS conforming to IS 2062 : 1999 latest edition. All other specification for these items shall be as per 4.A.1 only.

For , 4.A.1 & 4.A.2 , all hot rolled members shall conform to IS 2062 or BS EN 10025- S 275. All built up sections shall conform to IS 8500 or ASTM A 572 or BSEN 10025 S 355 . All cold rolled sections such as purlins , side girts etc. shall be of Grade 50 Steel or equivalent and galvanised .

4. A.3. Connection Bolts and Anchor Bolts

These shall be procured from M/s. GKW, TVS or from an equivalent source approved by HPCL Bolts for main structural connections are grade 8.8 /equivalent. Bolts for bracings, purlins, girts etc. are grade 4.6 / equivalent.

Anchor Bolts:

Foundation bolts shall be anchor bolts of suitable size and length and made from steel of grade 8.8 or equivalent.

These shall be supplied as per the required designs and shall be manufactured out of IS 2062 : 1999 latest edition steel solid bars with threading on the top side. One set of nut and washer shall be supplied along with anchor bolts and fixed. Party to issue material test and quality certificate regarding confirmation that it conforms to the specification mentioned above.

4. A.4 Painting System

All the column and roof structural shall be supplied with factory applied one coat of Zinc Chromate Red Oxide primer, minimum 25 micron thick. Additional two coats of zinc-chromate primer of minimum 25 micron thickness each and 2 coats of enamel paint of minimum 25 micron thickness each, of approved colour and shade shall be applied at site for metal surfaces. Necessary manual surface preparation to be carried out before primer application. Approved makes of primers and paints are Berger / Asian Paints /ICI /J. Nicholson.

Party to ensure sufficient drying time after each coat all complete as per direction of EIC. Digital elcometer shall be arranged by the party at site to record the DFT (Dry film thickness).

For columns and MS fascia painting the colour used should be FRENCH BLUE / as directed by EIC.

4. B Coverings:

4. B.1 Roofing System:

Roofing base material should be of cold rolled steel of 0.55 mm thick and conform to ASTM: A 446 having yield stress of 275 MPA. The coating should be Aluminium and Zinc alloy comprising 55% Al, 43.5 Zinc & 1.5 % Silicon, as per ASTM: A 792. The coating mass should not be less than 150 Gms per Sqm (total of both sides). For, bare galvalume, TCT should not be less than 0.55 mm. The roofing should be of Klippon type.

Sheets shall have approved side laps with top sheets facing away from the prevailing weather. Necessary profiled filler box should be provided at higher level of roof sheeting and at valley gutter to ensure water tightness in the profiled gaps. The fixing of roofing shall be done in such a manner that the roof is not drilled / punctured for fixing with the purlins.

HPCL approved make for roofing system are Interarch, Lloyd Steel, Hunter Douglas, Metcraft, Conwed & Tiger Steel or approved equivalent. The approved equivalent makes will be those only which are approved by HPCL. Any delay in obtaining this approval will be on contractor's account and no extension of time in this account will be considered.

4. B.2 Flashings, Cappings and trims:

These shall be formed out of same substrates as that of the roofing sheets and shall be supplied in standard lengths of 2.5 M in the required shapes and girths and fixed by means of hex-head mechanically galvanised stitching screws. Silicon sealant non-hardening neutral cure type shall be applied at all laps to avoid water seepage. .

4. B.3 Gutters:

These shall be formed out of 2 mm thick Aluminium sheets or more thick (if required for proper sealing) and shall be supplied in standard lengths of 2.5 M in the required shapes and girths with end caps, straps assembled with proper joint pieces riveted and sealed with Silicon Sealant or better material and to provide the Al sleeves for water flow through down take pipes . It shall be fixed by means of M6 galvanised stitching bolts. Silicon sealant, non-hardening neutral cure type shall be provided on all laps.

C Down take Assembly:

PVC pipes 150mm diameter, 4kg/cm² shall be used complete with compatible downspouts and elbows at terminating ends. Silicon sealant shall be applied at all junctions of the assembly. The discharge of rain water shall not be done on the driveway near the islands. PVC pipe should be ISI marked.

D. Metal Ceiling System: (150 mm wide or 200 mm wide)

Metal Ceiling System shall comprise of exterior grade Interlocking Ceiling panels, Carriers, Suspension System and edge closure flashing as per the following specifications:

Supplying and installation of 150 F /200 F ceiling system (exterior grade) comprising of 150 mm x 17mm deep panes roll formed out of 0.5 mm thick pre-coated galvanised steel. (base steel 240 Mpa yield strength and coated with zinc in a min. Thickness of 180 gms per sqm total of both sides). The sheet material should be sourced from original manufacturer / through authorised import agents only.

The panels shall be degreased, pretreated and pre-coated on one side in manufacturer's standard colour shade (matching the shade of luminaries cover) min. 20 micron, on the exposed surface. The rear side of the panels shall be given a coat of primer and a wash coat while the finished side shall be given a coat of primer and finish colour coat in polyester paint for a min dry film thickness of 20 microns.

Fixing arrangement shall be on to the roll formed carriers 34.5 mm x 48 mm deep out of 0.6mm thick galvanised steel with prongs to hold panels in a module of 150mm at maximum 1.2 mtrs c/c. The carriers to be suspended from roof truss by rigid suspension rods with special height adjustment spring steel clips at maximum 1.2 mtrs c/c. Hangers to be fixed to the roof by "J" hooks and nylon inserts as per manufacturer's recommendation. Panels shall be supplied in custom length up to max. of 5 mtrs. **Job also includes providing ceiling flashing using factory formed 0.5mm thick polyester coated galvalume steel material or**

of the false ceiling material . False ceiling material with panel widths of up to 200 mm is also acceptable, as approved by site EIC.

HPCL approved make for metal ceiling system are Interarch , Luxalon(Hunter Douglas) ,Metcraft ,Conwed Enterprises & Tiger Steel or approved equivalent. The approved equivalent makes will be those only which are approved by HPCL. Any delay in obtaining this approval will be on contractor's account and no extension of time in this account will be considered.

E. Illuminated banding (RVI facia) CANOPY FABRICATOR should provide required provisions so that the banding box (not in Canopy party's scope) can be fixed on the canopy facia , without having need to cut the roof materials .

F.1 Foundations:

Footing and foundations shall be designed and provided as per the requirements of the steel columns and soil condition. Soil test to be carried out by the contractor. M – 20 Concrete mix shall be RCC 1:1.5:3 by volume, with steel reinforcement of 1% (MINIMUM) of cross-sectional area. Cement used shall be Grade – 43. The job includes form work (only steel of plywood minimum 19 mm thick shall be used as shuttering) excavation, soling 9” thick, PCC 1:3:6- 6” thick, back filling etc. Payment will be made based on volume of RCC designed and provided.

Quantity of RCC being considered for evaluation of the tender will be 3 CUM per Column. (approx)

The no. of columns given is only indicative and actual requirement will be decided at site based on site conditions and design.

Design of foundations has to be approved by HPCL before starting the job.

F.2 Reinforcement Steel :

Supply ,fabrication , hoisting and placing in position HYSD reinforcement bars conforming to IS 1786 : 1985 latest edition Grade FE 415 as per detailed drawing and specifications including cutting, bending, cranking and tying with 18 SWG black annealed binding wire complete.

G. Luminaries - Supply and fixing:-

WIPRO Make Model No. - WIP 41355 SL, confirming of IP 65, Recess mounted bottom opening luminaire as per attached Drg. Suitable for 3* 55 W CFL BOCR ILuminaire with Parabolic Reflector & SIGMA Electronic Ballast size 595*579*110 complete with Lamps Reflectors, Ballast , Diffuser, Al. Encloser & all other necessary accessories reqd. Your cost should be inclusive of Luminaire, Reflectors, Ballast , Diffuser, Al. Encloser , Cabling, fitting & all necessary accessories & charges for fitting the same in the canopy except cost of 55 W CFL Lamp. Cost of the 55 W CFL Lamp will be paid as per the rates finalised for the item pertaining to "55 W CFL".

1. Dimensions : All the dimensions will be as per the attached Drg. Height of the product will be 110 mm.

Knock Outs : 4 Nos. On Top & one on each side with piercing Plug.

2. Luminaires : Will be suitable for 3* 55 W CFL(TC-L) Lamps.

3. Ballast : Use Helvar Ballast - WIPRO Cat. No. EL 1*55s & EL 2*55s - 1 No. Each to be prewired on the gear tray.

4. Reflector : Parabolic shape in 0.3mm Pre Anodized sheet.

5. Acrylic : Use clear Acrylic cover - 2mm thick

6. All other details will be same as WIPRO Standard WIP Series of BOCR.

7. LAMPS: 55 W CFL PHILIPS / OSRAM Make suitable for above luminaire.

Equivalent models for Luminaire & Lamps from Philips, Crompton Greaves or Bajaj are acceptable only if the same are approved by HPCL.

OPTION II:

Recessed bottom opening Philips Make Luminaire. Model No. FBS650 , 3* 36 W PL-L EB BOGT confirming to IP 65 complete with Lamps Reflectors, Ballast , Diffuser, SS Encloser & all other necessary accessories reqd. Your cost should be inclusive of Luminaire, Reflectors, Ballast , Diffuser, Encloser , Glass cover, Cabling, fitting & all necessary accessories required for fitting the same in the canopy except cost of 36 W CFL Lamp. Cost of the 36 W CFL Lamp will be paid as per the rates finalised for the item pertaining to "36 W CFL".

LAMPS: 36 W CFL PHILIPS/ OSRAM make suitable for above luminaire.

Equivalent models for Luminaire & Lamps from Philips, Crompton Greaves or Bajaj are acceptable only if the same are approved by HPCL.

Section (0 5): SUBMITTALS

The successful bidder shall submit the following along with each supply at appropriate stages to EIC.

A. Manufacturers' test certificate for structural steel, roofing, ceilings and luminaries.

B. Guarantee for roofing = 20 years as life to first maintenance.

C. Guarantee for Ceiling =10 years as life to first maintenance.

D. Guarantee against leakage = 12 months from the date of completion of works.

E. Stability certificate for canopy structure from licensed Structural Engineer.

F. Structural & Foundation design calculations duly verified from licensed Structural/civil Engineer.

G. Shop drawings for:

- 1) Canopy structure.
- 2) Canopy column foundations.
- 3) Roofing System

- 4) Ceiling System
- 5) Guttering and down take assembly
- H. Single line diagram for all cabling / electrical connections to luminaries / speakers etc.
- I. Foundation drawing.
- J. Format for Affidavit for Sr No. B, C, D & repair / rectification job is attached. Vendors are requested to submit the duly filled in affidavit along with the Technical Bid of the tender.

Specifications updated as on: 11th Nov 2009.

FORMAT FOR SUBMITTING AFFIDAVIT BY THE PARTY

(To be submitted on Rs 100 /- Stamp paper for each site along with Final Bill)

From

To,

Hindustan Petroleum Corporation Limited
_____ Regional Office

Sub: Canopy at _____

I, _____, son/daughter of _____
Residing at _____,
Proprietor / Director of M/s _____,
(The Firm/Company) is authorised to sign this affidavit and undertaking on behalf of the
Firm/Company. I do hereby, solemnly affirm and declare as under:-

1. That we have completed the job under PO no. _____ dated _____
At the above mentioned Retail Outlet location.

2. That the canopy shall meet following performance criteria:-

2.1 Roofing shall not leak up to 20 years from the date of installation.

2.2 False Ceiling shall be free of defect up to 10 years from the date of installation i.e. up to
_____, _____

2.3 Leakage through any part of canopy shall not take place till 12 months from the date of
installation of canopy i.e. till _____, _____ .

3. Should any of the above occur, I shall arrange for rectification of the same free of cost.

4. In case I cannot carry out the rectification job , within one month of the letter from HPCL Regional Office , HPCL reserves the right to carryout the job through other contractors at my risk and cost .

Dated at _____ this _____ of _____

Very truly yours,

(Signature and Seal)

Witness 1: _____
Name and address

Name (Block Letter) _____
Address _____

Witness 2: _____
Name and address