TECHNICAL SPECIFICATION FOR METER BOX MADE FROM THERMOSETTING PLASTIC FOR SINGLE PHASE ENERGY METER.

1.0 SCOPE:

1.1 This specification covers the design, manufacturing and testing of anticorrosive, dust proof, rust proof, shock proof, self extinguishing property, resistant to heat, vermin & water proof, Ultra Violet Stabilized and pilfer resistant Meter Box made from Thermosetting Plastic i.e. Glass Reinforced Polyester Sheet Moulding Compound (SMC) Confirming to IS:13410(1992) and attached technical specification, drawing and IS 14772:2000.

2.0 CONSTRUCTION:

2.1 The minimum size of box from inside shall be 250 X 220 X 135 mm and thickness 1.5 mm so as to house any make of energy meter for single phase mains.

2.2 Meter Box shall be moulded in a single piece forming the body of the meter box with a cover fitted with base by minimum two nos. concealed stainless steel hinges. The lid/cover shall rest on the collar of the Meter Box base in such a way that any access from outside of the meter is not possible. The hinges shall be fitted with the Meter Box body base and cover rigidly, thereby making the Meter Box pilfer resistant.

2.3 The door in closed position should be overlapped in such a manner that no direct entry or Access is possible. The Meter Box shall be closed by SS 'U' Clamp of minimum 0.8 mm. ($\pm$ 0.1 mm) thickness for holding and locking of the door with body base. The "U" Clamp shall have 4mm. diameter hole through which it is possible to seal the box.

2.4 The box should have a window of size 110 X 120 mm. provided with internally fitted glass of 3 mm thickness as shown in the drawing. The glass shall be fixed from inside without any hardware exposed at front. The door shall open from right to left at 90 degree.

2.5 The top surface of box shall have little tapering shape towards both sides of the meter box for easy flow of rainwater.

2.6 4 Nos. holes on backside box wall having 6mm diameter shall be provided for fixing of box on the wall.

2.7 Cable entry and exit holes of 14 mm. diameters shall be provided on both sides of box with Good quality rubber grommets as shown in the drawing.

2.8. One no Earth bolt of 6 mm diameter x 25 mm. length with 2 nos. nuts and 2 nos. washers & aspiring washer shall be provided. The irremovable earthing symbol is to be provided near earth bolt.

2.9 The adjustable bracket (Engineering/Polymeric plastic) to facilitate Meter fixing of various make of meter by self threading screw should be provided as per drawing.

2.10 All corners of the meter box should be round and not pointed ones. Hardware used for fixing window glass, hinges and particle board shall be concealed and non removable from out side.

2.11 All M.S. parts shall be zinc passivated.

3.0 GUARANTAEED TECHNICAL PARTICULARS:

Guaranteed Technical particulars are given in enclosed Annexure A and B. Bidder shall submit the data in given Performa.

4.0 TYPE TEST CERTIFICATE:

The bidder shall submit type test report as per IS-14772-2000 & IS – 13410:1992 from CIPET, Ahmedabad/ERDA, Baroda or NABL approved lab along with the offer. Type Test Certificate should not be older than 5 years as on the date of tender opening.

4.1 ROUTINE TEST:

Manufacturer has to carryout routine test during production to check the essential requirements that are likely to vary during production. Manufacture has to keep records of the same and to be produced for verification of inspector when asked at the time of inspection of lot.

4.2 ACCEPTANCE TEST:

The acceptance tests shall be carried out on randomly selected samples as per Annexure – B.

4.3 TYPE TEST:

From the offered lot, Sample shall be picked up at discretion of UTTAR GUJARAT VIJ COMPANY LIMITED for type test at CIPET, Ahmedabad/ERDA., Baroda or NABL approved lab for every 50,000 nos. supply. For lot size smaller than 50,000 nos. latest type test certificate for the same item but not older than 2 years from the date of inspection shall be considered valid. The charges for the Type Test shall be borne by bidder. On passing the type test successfully, the lot shall be accepted. In case, the boxes are not confirmed to type test, another sample from the lot shall be selected and tested again. On receipt of unsatisfactory results, the lot shall be rejected and new lot shall be offered for inspection keeping aside old lot offered and rejected earlier by the UTTAR GUJARAT VIJ COMPANY LIMITED. However UTTAR GUJARAT VIJ COMPANY LIMITED reserves the right to accept the boxes by levying penalty as per description of the UTTAR GUJARAT VIJ COMPANY LIMITED.

5.0 RAW MATERIALS:

Test certificate for the material used in the lot offered and document for purchase of raw material should be maintained by manufacturer and produced to inspector as and when required.

6.0 FACILITY:

The bidder shall have facility to test the box for routine tests and acceptance as per IS – 14772 : 2000 and IS – 13410 at their works. The bidder has to submit list of Machinery &Equipment/ Testing instruments etc.

7.0 INSPECTION AND TESTING:

The bidder has to offer the boxes for inspection at his works before dispatch. The manufacturer will offer all facilities to inspector without any charge.

8.0 DISPATCH:

The meter boxes shall be so dispatched as to ensure that no damage occurs during transport where they may be subject to rough handling.

9. TENDER SAMPLE:

A tender sample of two nos. as per specifications will have to be submitted before opening of the tender to. The Deputy Engineer, **Deputy Engineer (Stores): Regional Store Office: UTTAR GUJARAT VIJ COMPANY LTD.: Visnagar Road: Mehsana: 384001**

ANNEXURE – A

GUARANTAEED TECHNICAL PARTICULARS FOR SINGLE PHASE METER BOX

SR. NO.	PARTICULARS	DETAILED PARTICULARS	TOBE OFFERED BY BIDDER
1.	Maker's name	To be intimated by the supplier	
2.	Material	Glass reinforced polyester sheet moulding compound	
3.	Grade of Material	SMC confirming to IS:13410:1992 Grade S 1	
4.	Properties of Material of Construction of Meter Box		
	Heat Deflection Temperature (Ref.Std.IS:13410)	150°C(Minimum)	
	Exposure to flame (Ref.Std.IS:4249)	Self-extinguishing	
	Melting Point (Ref.Std.IS:13360)	Does not melt	
	Glow wire test at 650C	As per IS 11000 Parat-2/sec-1	
	Degree of protection	IP-42 as per ;IS-12063/87	
	Heat distortion temp.	125C(Min)as per IS:13410	
	Dielectric Strength at 90 C in Oil	9KV/mm(Min)as per IS:6262-1971	
5.	Inside dimension of Meter Box	To be mentioned by the supplier	
	a. Height	250mm(min)	
	b. Width	220mm(min)	
	c. Depth	135mm(min)	
	d. Thickness of SMC Sheet	1.5 mm(min)	
6.	Window having Glass of 3mm thickness	Window Size 110mm X 120mm	
	Fixing of Glass	Fitted from inside in such a way that it can not be replaced without opening door(with plastic frame all around)	
7.	Earthing Arrangement		
	Earthing bolt	One no. of zinc passivated Earthing bolt of MS with 2 nuts and 2 washers and spring washer. Irremovable earthing sign has to be provided near to earthing bolt.	
	Dia. & Length of earthing bolts	Dia. 6mm Length 25mm	
8.	Door Locking.	For Holding of door with base one no. of "U" shaped clamps to be provided	
9.	Manufacturer short name and UGVCL shall be embossed. A/T no. and month & year of manufacture shall be screen printed.	To be provided on the front side of the box	
10	Sealing arrangement	Holes for wire seal.	
11.	Wire entry	Side entry 14 mm dia. hole	
12.	Colour of Meter Box	Off White	

Date of tenderer **Place** **Company's Round Seal** **Signature & Seal**

13.	Meter Mounting Arrangement	Universal type to suit mounting of any make of meter broadly as per the Drawing.	

Annexure B

TEST REQUIREMENT FOR METER BOX	Reference Standards
1) ROUTINE TEST	
(a) Protection against electric shock	**IS 14772**
(b) Provision for earthing	**-Do-**
2) ACCEPTANCE TESTS (Random samples 10 nos. to be selected)	
(a) Marking (Name, Trade mark)	**-Do-**
(b) Protection against electric shock	**-Do-**
(c) Provision for earthing	**-Do-**
(d) Construction and Dimension verification	**-Do-**
(e) Heat distortion temperature (min.150°C) (On any one sample)	**IS:13410**
3) TYPE TEST	
(a) Marking	**IS:14772**
(b) Dimensions	**-Do-**
(c) Protection against electric shock	**-Do-**
(d) Provision for eatrthing	**-Do-**
(e) Construction	**-Do-**
(f) Resistance to ageing, to humid conditions, Ingress of Solid objects and to harmful ingress Of water	**-Do-**
(g) Mechanical strength	**-Do-**
(h) Resistance to heat	**-Do-**
(i) Resistance of insulating material to abnormal heat and fire	**-Do-**
(j) Resistance to rusting	**-Do-**
(k) Resistance of tracking	**-Do**

(l) Heat distortion temperature (min.150°C)	**IS 13360 (Part VI Sec III)**
(m) Self Extinguishing (Spirit Burner)	**IS: 4249**
(n) Material Identification	**CIPET**
All type tests as per IS 13410/1992	**IS 13410**