

TENDER NOTICE No: PGVCL/PROC/LT PVC CABLE/1020



PASCHIM GUJARAT VIJ COMPANY LIMITED

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TECHNICAL SPECIFICATION OF UNARMoured 1100 VOLTS L.T.PVC INSULATED 4 CORE 10mm² AND 16mm² PVC INSULATED PVC SHEATHED CABLE WITH CIRCULAR ALUMINIUM CONDUCTOR:

I. SCOPE:

This specification covers Manufacture, testing at works, supply and delivery of unarmored 1100 Volts LT 4 Core X 10 mm² and 4 Core X 16 mm² PVC insulated and PVC sheathed cables, with circular aluminium conductor with yellow sheath to any Company's stores in South Gujarat.

II. CLIMATIC CONDITIONS:

The unarmored L.T. PVC cables are required to be laid outdoor either for giving power supply to motive power consumers or for LT distribution system on transformers. The climatic conditions will be as under.

- | | | |
|---|---|--|
| a) Temperature Variation | : | 5°C to 55°C |
| b) Relative humidity | : | Upto 95% |
| c) Altitude | : | 0 to 1000 Mtrs. |
| d) No. of tropical monsoon months | : | 3 (Three) |
| e) Max. wind pressure | : | 150 Kg/cm ² |
| f) Average annual rainfall | : | 750/800 mm |
| g) Average thunderstorm base per annum. | : | 15 |
| h) Terrain | : | Coastal saline, desert chemically Polluted, heavily/ moderately, polluted and normal atmosphere. |

Signature of Tenderer:		Company's Round Seal:
Date:	Place:	

TENDER NOTICE No: PGVCL/PROC/LT PVC CABLE/1020

III. INSTALLATIONS:

These cables are required to be installed outdoor exposed to atmosphere, supported on pole, hugs or overhead either for service connection to motive power consumers or for any narrow crossing etc. where adequate electrical clearance for bare conductor is not possible.

IV. APPLICABLE STANDARDS :

Unless otherwise specifically stated in the specification

The cables shall conform to the following standards :

1. IS - 694 of 1990
2. IS - 5831 of 1984
3. IS - 8130 of 1984
4. IS - 10418 of 1982 (For wooden Drums)
5. IS - 10810 of 1984 (Methods of test for cable).

The above standards with latest amendment/revision in force on date of tender shall be applicable. The Type Test on cable to be conducted at Government approved Laboratory as per IS-694/90 with latest amendment /revision as in force on the date of inviting tender. All acceptance and routine tests shall be carried as per IS-694/1990 with latest amendment/revision in force on date of inviting tender during the execution or order placed and till complete supply is over.

V. TECHNICAL PARTICULARS:

a) Voltage Class and Al. Conductor Grade :

The Cable shall be PVC insulated and PVC sheathed of yellow colour, suitable for working voltage up to and including 1100 Volts confirming to standard mentioned above and with ISI mark having H2 grade Class-I aluminium circular conductor for Cables up to 10mm², H4 grade class-2 aluminium conductor shall be used for 16 sqmm cable.

b) Insulation and Sheath :

The type of insulation shall be Type-A as per IS-5831 of 1984. Similarly the type of sheath shall be type ST-1 as per IS-5831 of 1984.

- (i) Colour of Insulation of each core as specified in IS.
- (ii) Colour of outer sheath shall be yellow only.

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TENDER NOTICE No: PGVCL/PROC/LT PVC CABLE/1020

VI. PACKING AND MARKING/EMBOSSING:

i) The LT PVC cable of size 6mm² shall be supplied in coils packed in polythene straps each of 100 Meters standard length. PVC cables of size 10mm² & 16mm² shall be wound in non-returnable wooden drums with standard length of 500 Mtrs.

ii) The wooden drums shall be as per IS:10418/1982. The outer Surface of the drums shall be painted with White Aluminum paint. Similarly, the inside surface of the drum shall have the protective layer of varnish/paint to protect it from white ants.

The ends of the cable shall be sealed by means of non-hydroscopic sealing materials.

iii) The following information must be either stenciled on drums or printed on the label attached with the coil.

- a) IS:694/1990
- b) Manufacturer's name, brand name or trademark.
- c) Type of cable and voltage grade.
- d) Number of cores
- e) Nominal cross sectional area of conductor.
- f) Cable code.
- g) Colour of core.
- h) Length of cable on the reel, drum, or coil.
- i) Number of lengths on reel, drum or coil.
- j) Direction of rotation of drum (by means of arrow).
- k) Approximate gross weight and drum number.
- l) Country of manufacture.
- m) Year of manufacture.
- n) A/T No. and date.
- o) Date of dispatch.
- p) Property of PGVCL
- q) Details of consignee (on wooden drums only).
- r) ISI Mark.

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TENDER NOTICE No: PGVCL/PROC/LT PVC CABLE/1020

VII) The following word shall be duly embossed on sheath of every meter of length of all cables. The embossing should be clear and visible.

- a) PGVCL
- b) Voltage Grade.
- c) IS Number.
- d) Year of manufacture
- e) Trade mark of supplier

Also the marking (i.e. numbers 1, 2, 3...) showing the continuous length of the cable should be done on outer sheath of cable at interval of every one meter length.

VIII) a) Tolerance in length: $\pm\frac{1}{2}\%$ of standard length.

b) Non Standard Length (For 4C X 10mm² & 4C X 16 mm²) :

The non-standard length of not less than 100 Mts. for 4C X 10mm² and 4C X 16mm² cables up to 5% of the order quantity will be acceptable.

IX) SUBMISSION OF ISI LICENCE FOR IS 694/90 FOR OUTDOOR USE OF PVC CABLE & G.T.P.

Cables bearing ISI Mark only will be acceptable. The tenderer Should submit attested copy of ISI License of IS:694/1990 valid at least up to the date of tender. If applied for renewal, the copy of receipt of fees and or acknowledgement of ISI/BSI shall be furnished along with copy of IS License (expired) with the offer.

The tenderer shall also submit duly filled up GTP along with tender failing which offer will be ignored.

X) SUBMISSION OF TYPE TEST CERIFICATE NOT MORE THAN FIVE YEARS OLD FROM DATE OF OPENING OF TENDER

The duly attested copy of Type Test Certificate at least one of the offered sizes as per IS:694/90 be submitted from Govt. approved laboratory along with the offer. The Type Test Certificate should cover all the test as per table 8 & one test "additional aging test" from table 9 of IS IS-694/1990 with latest amendment/revision in operation on date of inviting tender.

Party has to submit type test certificate on ordered size before commencement of supply & get approved without affecting delivery scheduled.

XI) SEALING:

Signature of Tenderer:		Company's Round Seal:
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TENDER NOTICE No: PGMVCL/PROC/LT PVC CABLE/1020

Each coil are to be provided with lead seals with seal wire .Both ends of cables (in case of 10mm² & 16mm² Cable) to be provided with lead seals as above.

XII) INSPECTION AND TESTING:-

a) Testing will be carried out at the works of manufacturer's in presence of Company's representative at the firm's cost according to IS-694/1990 with latest amendment/revisions if any or date of inviting tender.

Material shall not be dispatch by the supplier without having being inspected and test certificate approved by Company's representative and obtaining of specific dispatch instructions in writing.

b) The Company reserves the right to select sample from any offered/inspected lot against the A/T to be issued which will be get type tested at any Government approved laboratory as decided by the Company The results of this type-tested sample shall be applicable for the entire quantity of the particular lot offered or supplied by the supplier. The Company shall bear the testing charges if sample passes all the tests and if sample fails in any one of the tests, supplier shall have to bear testing charges, same are recoverable from the supplier's any pending bill, security deposit, Bank Guarantee or by any suitable means, whichever deem fit be the Company In case of sample failing in aforesaid type tests, supplier shall have to replace the whole lot materials, which should pass through the type tests, the retesting charges will have to be paid by supplier. If any quantity against the particular lot is consumed by the Company Supplier will agree for any penalty/deduction in price as decided by the competent authority of Company Decision of competent authority in case of any dispute will be final and binding to supplier.

XIV) MACHINE/METER CALIBRATION:

All machines and meters to be used in testing shall be calibrated within valid time limit either at the Laboratory of manufacturer or machine/meter of at Govt. recognized laboratory. The machine/meter to be used in testing shall be in tolerance limit as per their accuracy class.

XIV) IMPORTANT:

In absence of valid ISI License/GTP duly filled in/and copy of type test certificate duly attested by authorized person, offer will be liable to be ignored without any further correspondence.

XV) ISI MARKING :

“The material supplied shall be confirming to Indian Standard Specification and also with ISI marking and even after inspection of the lot, if the materials received at site is found without ISI marking, the lot shall be rejected and no further correspondence shall be entertained in this regard.”

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TENDER NOTICE No: PGVCL/PROC/LT PVC CABLE/1020

Manufacturer's Name:

And Address:

GUARANTEED TECHNICAL PARTICULARS

Technical information and Guaranteed Technical Particulars for supply of 4 Core (i) 10 sqmm and (ii) 16 sqmm round, unarmoured, L.T. PVC Cable having colour of sheath yellow.

PART - A

Bidder has to confirm following important requirements:

Sr.	Particulars	Confirmation
1.	Cable shall be manufactured and supplied Confirming to IS:694/1990 with latest Amendment if any and Company's specification	Yes
2.	Cable drums/label shall bear ISI Mark	Yes
3.	ISI License shall remain valid till order is Completed	Yes
4.	Colour of Sheath - Yellow	Yes
5.	Size: 4 Core (i) 10 sqmm and (ii) 16 sqmm.	Yes
6.	Shape - Round	Yes
7.	Standard length in case of 10 & 16 sqmm 500 Mtrs.± 0.5 %	Yes
8.	In case of 10 & 16 sqmm. a length measuring 100 Mtrs. to 497 Mtrs. shall be considered Non-Standard length and is acceptable up to 5 % of the ordered quantity.	Yes
9.	Packing shall contain only one Length.	Yes
10.	Packing material: For 10 & 16 sqmm. - Wooden drums as per IS:10418/1982 duly Painted.	Yes
11.	Following shall be embossed on cable	
	a. PGVCL	Yes
	b. 1100 Volts	Yes
	c. IS:694/1990	Yes
	d. Year of manufacture	Yes
	e. Trade Mark	Yes

12. Marking on label/drum shall be as per IS: 694

Yes

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TENDER NOTICE No: PGVCL/PROC/LT PVC CABLE/1020

13. Conductor - Aluminum:
- a) For 10 sqmm. Class-I Solid circular Grade H2. Yes
 - b) For 16 sqmm. Class-2, circular or shaped Grade H4 Yes
14. Maximum Conductor resistance at 20°C
- a) 10 sqmm. Cable - 3.08 Ohm/KM. Yes
 - B) 16 sqmm. Cable - 1.91 Ohm/KM. Yes
15. Volume resistivity of insulation
- a) At 27°C - 1×10^{13} Ohm-cm. Min Yes
 - b) At 70°C - 1×10^{10} Ohm-cm. Min Yes
16. Tensile strength of Insulation and sheath - 12.5 N/mm² Min. Yes
17. Elongation at break of Insulation and Sheath - 150 % Min. Yes
18. Thickness of insulation & Sheath :

Cable size mm ²	Insulation		Sheath		Confirmation
	Average	Minimum	Average	Minimum	
10	1.0	0.8	1.6	1.26	Yes
16	1.0	0.8	1.6	1.26	Yes

PART - B

Bidders has to furnish below details about material for information:

<u>Sr.No.</u>	<u>Particulars</u>	<u>Confirmation</u>		
		<u>Alum.</u>	<u>PVC</u>	<u>Total</u>
1.	ISI License for IS:694			
	a. Number			
	b. Date of expiry			
2.	Approximate weight of 100 meters length (Weight in KG.)			
	a. 10 sqmm			
	b. 16 sqmm			
3.	In case of 16 sqmm Cable Conductor, Circular or shaped? (Type Test on offered shape to be submitted.)			

Signature of Tenderer:		Company's Round Seal:
Date:	Place:	

TENDER NOTICE No: PGVCL/PROC/LT PVC CABLE/1020

PART - C (ENCLOSURES)

Bidders have to enclose following documents and has to confirm for the Same.

Sr.No.	Particulars	Confirmation
1.	ISI License	Yes
2.	Proof if applied for renewal of ISI License	Yes/No
3.	<u>TYPE TEST CERTIFICATE:</u> Type test certificate from Govt. approved Laboratory (for all core) with yellow Colour Sheath a. Name of Lab. b. T.R.No. (i) 10 sqmm and (ii) 16 sqmm. c. Date	Yes
4.	List of plant and machinery	Yes
5.	List of testing facility available	Yes
6.	List of orders pending/executed a. with GUVNL or their Subsidiary Companies (i.e. MGVCL/DGVCL/UGVCL/PGVCL) Yes b. with agencies other than GUVNL or their Subsidiary Companies (i.e. MGVCL/DGVCL/UGVCL/PGVCL)	Yes

PART - D

Bidders have to mention below deviation if any, quoting relevant clause of specification.

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Signature of Tenderer:		Company's Round Seal:
Date:	Place:	