# Office of the Executive Engineer (E) IPDS Division Room No. 1804 "A", 18<sup>th</sup> Floor, New Delhi Municipal Council Palika Kendra, New Delhi: 110001 Office Tel.:- 011-23340588

### **CORRIGENDUM**

Sub:- Supplying and laying underground 11 KV cables of size 400 sq.mm and LT cable of various sizes in NDMC area.

Tender ID:- 2017\_NDMC\_126303\_1

# Ref:- Pre-bid meeting held on dated 29/03/2017 in the office of CE(E-II), Palika Kendra, New Delhi.

S.No.	As per Bid document	Amendment	
1.	Page 2 & 3 of tender notice	Be read as	
	Last date/time for receipt of tenders through e- procurement solution 10 <sup>th</sup> April 2017, 3.30PM	Last date/time for receipt of tenders through e- procurement solution - 28th April 2017, 3.30PM	
	Date/Time for opening of bid through e- procurement solution 10th April 2017, 4.00 PM	Date/Time for opening of bid through e- procurement solution - 28th April 2017, 4.00 PM	
2.	2ndpara from the top of page 4 of Bid document.	Be read as	
	Bids may also be submitted by consortium firm (having not more than two partners with lead partner must be manufacturer of both type of cable i.e 1.1 KV voltage level and 11 KV or above voltage level cable and other partner should have experience of laying of power cable of both type i.e 1.1 KV voltage level and 11 KV or above voltage level ). In case of consortium, all the terms and conditions of the bid document shall be applicable on the lead partner of consortium	Bids may also be submitted by consortium firm (having not more than two partners. Consortium partners shall nominate one as lead partner.  One partner must be manufacturer of both type of cable i.e 1.1 KV voltage level and 11 KV or above voltage level cable and other partner should have experience of laying of power cable of both type i.e 1.1 KV voltage level and 11 KV or above voltage level).  All the terms and conditions of the bid document shall be applicable on the lead partner of consortium.	
3.	Clause a at page 4-5 and clause 1 at page 6-7 of Bid document.  a. In case of original manufacturer (i.e both type of cable including 1.1 KV voltage level and 11 KV or above voltage level), one successfully completed work costing not less than Rs 31,74,66,403/- for supplying and laying underground power cable of rating 1.1 KV voltage level and 11 KV or above voltage level.	Be read as  a. In case of original manufacturer (i.e both type of cable including 1.1 KV voltage level and 11 KV or above voltage level), one successfully completed work costing not less than Rs 31,74,66,403/- for manufacturing, supplying and laying underground power cable of rating 1.1 KV voltage level and 11 KV or above voltage level.	
	In case of consortium lead partner must have experience of one successfully completed work costing not less than Rs. 19,26,45,440/- for supplying underground power cable (both type cable including 1.1 KV voltage level and 11 KV or above voltage level) and the other partner must have experience of one successfully completed	In case of consortium <b>one</b> partner must have experience of one successfully completed work costing not less than Rs. 19,26,45,440/- for manufacturing and supplying underground power cable (both type cable including 1.1 KV voltage level and 11 KV or above voltage level) and the other partner must have experience of one successfully completed work of laying	



work of laying underground power cable of both type i.e 1.1 KV voltage level and 11 KV or above voltage level costing not less than Rs 12,48,20,963/.

OR

In case of original manufacturer (i.e both type of cable including 1.1 KV voltage level and 11 KV or above voltage level),, two successfully completed work costing not less than Rs. 23,80,99,802/- for supplying and laying underground power cable of both type i.e 1.1 KV voltage level and 11 KV or above voltage level.

In case of consortium lead partner must have experience of two successfully completed work costing not less than Rs.14,44,84,080/- for supplying underground power cable (both type cable including 1.1 KV voltage level and 11 KV or above voltage level) in each work and the other partner must have experience of two successfully completed work of laying underground power cable of both type i.e 1.1 KV voltage level and 11 KV or above voltage level costing not less than Rs. 9,36,15,722/- in each work

OR

In case of original manufacturer (i.e both type of cable including 1.1 KV voltage level and 11 KV or above voltage level),, three successfully completed work costing not less than Rs. 15,87,33,201/- for supplying and laying underground power cable of both type i.e 1.1 KV voltage level and 11 KV or above voltage level.

In case of consortium lead partner must have experience of three successfully completed work costing not less than Rs. 9,63,22,720/- for supplying underground power cable (both type cable including 1.1 KV voltage level and 11 KV or above voltage level)in each work and the other partner must have experience of three successfully completed works of laying underground power cable of both type i.e 1.1 KV voltage level and 11 KV or above voltage level costing not less than Rs. 6,24,10,481/- in each work.

a. The bidder or in case of consortium, lead partner should have experience of one work as mentioned above costing not less than Rs. 15,87,33,201/- with some central / state govt. / central autonomous body/ central public sector undertaking/ PSU's.

The value of...... Receipt of application for bids.

Note: Experience of the bidder / consortium partner for laying of 11 kv or above voltage level cable alone be considered for qualifying the eligibility conditions.

underground power cable of both type i.e 1.1 KV voltage level and 11 KV or above voltage level costing not less than Rs 12,48,20,963/.

OR

In case of original manufacturer (i.e both type of cable including 1.1 KV voltage level and 11 KV or above voltage level),, two successfully completed work costing not less than Rs. 23,80,99,802/- for manufacturing, supplying and laying underground power cable of both type i.e 1.1 KV voltage level and 11 KV or above voltage level.

In case of consortium, **one** partner must have experience of two successfully completed work costing not less than Rs.14,44,84,080/- for manufacturing and supplying underground power cable (both type cable including 1.1 KV voltage level and 11 KV or above voltage level) in each work and the other partner must have experience of two successfully completed work of laying underground power cable of both type i.e 1.1 KV voltage level and 11 KV or above voltage level costing not less than Rs. 9,36,15,722/- in each work

OR

In case of original manufacturer (i.e both type of cable including 1.1 KV voltage level and 11 KV or above voltage level), three successfully completed work costing not less than Rs. 15,87,33,201/- for manufacturing, supplying and laying underground power cable of both type i.e 1.1 KV voltage level and 11 KV or above voltage level.

In case of consortium, **one** partner must have experience of three successfully completed work costing not less than Rs. 9,63,22,720/- for manufacturing and supplying underground power cable (both type cable including 1.1 KV voltage level and 11 KV or above voltage level)in each work and the other partner must have experience of three successfully completed works of laying underground power cable of both type i.e 1.1 KV voltage level and 11 KV or above voltage level costing not less than Rs. 6,24,10,481/- in each work.

b(i). In case of original manufacturer (i.e both type of cable including 1.1 KV voltage level and 11 KV or above voltage level), must have experience of one work as mentioned above costing not less than Rs. 15,87,33,201/- with some central / state govt. / central autonomous body/ central public sector undertaking/ PSU's.

b(ii). In case of consortium, **one** partner must have experience of one work as mentioned above costing not less than Rs. 9,63,22,720/- with some central / state govt. / central autonomous body/ central public sector undertaking/ PSU's and the other partner must have experience of one completed works of laying underground power cable of both type i.e 1.1 KV voltage level and 11 KV or above voltage level costing not less than Rs. 6,24,10,481/- with some central / state govt. / central autonomous body/ central public sector undertaking/ PSU's.

The value of...... Receipt of application for bids.

NOTE:1. In case the bidder is original manufacturer (i.e both types of cables including 1.1 KV voltage level and 11 KV or above voltage

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		level), having experience of manufacturing, supplying & laying of 11 KV or above voltage level cable alone be considered for qualifying the eligibility conditions.  2. In case consortium, one partner having Experience of supplying of 11 kv or above voltage level cable alone and other partner having Experience of laying of 11 kv or above voltage level cable alone be considered for qualifying the eligibility conditions.	
4.	Clause 5 at page 5 of Bid document	Be read as	
	Should not have incurred any loss in more than two years during the last five years ending 31st March 2016. In case of consortium, this condition should be meet by all the members.	Should have net worth of the each of the last three financial years should be positive. Net worth means the sum total of the paid up capital and free reserves (excluding reserves created out of revaluation) reduced by aggregate value of accumulated loses (including debit balance in profit and loss account for current year ) and intangible assets. In case of consortium, this condition shall meet individually by all members of consortium.	
=	Clause (a) at more 6 of Bid downsort	P	
5.	a. The bidder or in case of consortium, lead partner should have electrical contractor's license issued from designated authority.	a. The bidder or in case of consortium, any partner should have electrical contractor's license issued from designated authority.	
6.	Clause (b) at page 6 of Bid document.	Be read as	
	The bidder or in case of consortium, lead partner should have Registration with Sales Tax Department under D VAT Act 2004 with latest Income Tax Return. Firm / contractor, who are not registered with sale tax department under D Vat act 2004 are also eligible subjected to furnish an under taking that they will register themselves under D Vat before submission of first running bill.	Bidder/ both consortium partner should be registered for D VAT with Sales Tax Department under D VAT Act 2004. Firm / contractor, who are not registered with sale tax department under D Vat act 2004 are also eligible subject to furnish an undertaking that they will register themselves under D Vat before submission of first running bill.  For direct item or bought out item in any case,	
		Road permit / way bill shall not be issued by NDMC.	
7.	Clause 21 at page 10 of Bid document	Be read as	
	The contractor, whose tender is accepted, will be required to furnish by way of security deposit for the fulfilment of his contract, an amount equal to 5% of the tendered value,Fixed deposit receipt and bank guarantee bonds of a Scheduled Bank or State Bank of India will also be accepted for this purpose provided confirmatory advice is enclosed.	The contractor, whose tender is accepted, will be required to furnish by way of security deposit for the fulfilment of his contract, an amount equal to 2.5% of the tendered value, Fixed deposit receipt and bank guarantee bonds of a Scheduled Bank or State Bank of India will also be accepted for this purpose provided confirmatory advice is enclosed.	
8.	Clause 38 at page 70-71 of Bid document	Be read as	
	Conditions for reimbursement of levy/taxes if levied after receipt of tenders	Conditions for reimbursement of levy/taxes if levied after receipt of tenders	
	(i)All tendered rates shall be inclusive of all taxes and levies (except Service Tax) payable under respective statues. However, if any further tax or levy or cess is imposed by stature, after the last stipulated dated for the receipt of tender including extensions if any and the contractor thereupon necessarily and properly pays such taxes/ levies/	(i)All tendered rates shall be inclusive of all taxes and levies (except Service Tax) payable under respective statues. However, if any further tax or levy or cess is imposed by stature, after the last stipulated dated for the receipt of tender including extensions if any and the contractor thereupon	



cess, the contractor shall be reimbursement the amount so paid, provided such payment, if any, is not in the opinion of the Additional Chief Engineer/ superintending engineer (Whose decision shall be final and binding on the contractor) attributable to delay in execution of work within the control of the contractor. The service tax will be reimbursed to contractor on submission of original deposit receipt claim/bill.

(ii)The Contractor shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and shall allow inspection of the same by a duly authorized representative of the NDMC and/ or the Engineer-in-charge and shall also furnish such other information /document as the Engineer-in Charge may require from time to time.

(iii) The contractor shall, within a period of 30 days of the imposition of any such further tax or levy or cess, give a written notice thereof to the Engineer-in-Charge that the same is given pursuant to this condition, together with all necessary information relating thereto.

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cess, the contractor shall be reimbursement the
amount so paid, provided such payment, if any, is
not in the opinion of the Additional Chief
Engineer/ superintending engineer (Whose
decision shall be final and binding on the
contractor) attributable to delay in execution of
work within the control of the contractor. The
service tax will be reimbursed to contractor on
submission of original deposit receipt claim/bill.
(ii)The Contractor shall keep necessary books of

(ii)The Contractor shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and shall allow inspection of the same by a duly authorized representative of the NDMC and/ or the Engineer-in-charge and shall also furnish such other information /document as the Engineer-in Charge may require from time to time.

(iii)The contractor shall, within a period of 30 days of the imposition of any such further tax or levy or cess, give a written notice thereof to the Engineer-in-Charge that the same is given pursuant to this condition, together with all necessary information relating thereto.

(a) In respect of direct transaction between the Employer and the Contractor, EXW price shall be **exclusive** of all cost as well as duties and taxes (viz., customs duties & levies, duties, salestax/VAT etc.) paid or payable on components, raw materials and any other items used for their consumption incorporated or to be incorporated in the Plant & Equipment.

Sales tax/VAT, excise duty, local tax and other levies for equipment/items under direct transaction including octroi/entry tax as applicable for destination site/state shall not be included in the EXW price but shall be indicated wherever applicable.

Whenever EXW price is quoted exclusive of excise duty and/or VAT, then the due credit under the CENVAT (Central Value Added Tax)/VAT scheme as per the relevant Government policies wherever applicable shall be taken into account by the Bidder while quoting bid price.

- (b) In respect of bought-out finished items, which shall be dispatched directly from the sub-vendor's works to the Employer's site (sale-in-transit), EXW price shall be **inclusive** of all cost as well as duties and tax (viz., custom duties & levies, duties, sales tax/VAT etc.) paid or payable. While quoting the EXW price, inclusive of excise duty and/or VAT, the due credit under the CENVAT (Central Value Added Tax)/VAT scheme as per the relevant Government policies wherever applicable shall be taken into account by the Bidder.
- (c) C form shall not be issued by NDMC.
- (d) In respect of service tax, same shall be paid by the contract or to the concerned department on demand and it will be reimbursed to him by the Engineer- in-charge after satisfying that it has been actually and genuinely paid by the contractor.

New clause 48 at page 77 of Bid document

New clause

New clause

PRICE ADJUSTMENT (FOR CABLES ONLY)



The prices for execution of the entire works covered under the scope of this work shall be quoted by the Bidder. The Ex-works price component, will be subject to price adjustment, only for cables stated under.

Prices for Ex-works price component for all other equipment/items except cables, Charges for Erection, Inland Freight & Insurance etc shall be FIRM and no price adjustment shall be applicable for these components for the entire duration of the Contract.

#### Cables

The price adjustment on the Ex-works price component, of Cables shall be as follows:

 $dP = P0 \times \{0.85 + 0.15 \times (A1/A0)\} - P0 + (M1 - M0),$ 

#### Where,

dP = Price Adjustment amount per kilometer of cable,

P0 = Ex-works price per kilometer of cable (Quoted Price)

A = Price Index for PVC / XLPE as published by IEEMA,

M1-M0 = Change in metal component of the exworks price of particular type and size of cable,

M = (Weight in MT of metal per kilometer of cable) x (published price index of metals per MT as published by IEEMA)

In the above price adjustment formulae: Subscript '0' refers to indices as on 30 days prior to date of bid opening (referred to as base date indices), Subscript '1' refers to indices as on 60 days prior to date of shipment.

The price adjustment amount towards price component of cable shall be subject to a ceiling of twenty percent (20%) of Ex-works price component of the corresponding contract price.

No price increase shall be allowed beyond the original delivery dates unless specifically stated in the Time Extension letter, if any, issued by the Employer. The Employer will, however, be entitled to any decrease in the Contract price which may be caused due to lower price adjustment amount in case of delivery beyond the original delivery dates. Therefore, in case of delivery of goods beyond the original delivery dates, the liability of the Employer shall be limited to the lower of the price adjustment amount which may be worked out either on scheduled date or actual date of dispatch of goods.

In case of non-publication of applicable indices on a particular date, which happens to be the applicable date for price adjustment purposes, the published indices prevailing immediately prior to the particular date shall be applicable.

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		If the price adjustment amount works out to be positive, the same is payable to the Contractor by the Employer and if it works out to be negative, the same is to be recovered by the Employer from the Contractor without any ceiling.	
		The Contractor shall promptly submit the price adjustment invoices for the supplies made and works executed at site, positively within three (3) months from the date of shipment/work done whether it is positive or negative.	
		Bids shall conform to the price adjustment provisions detailed above. Bids specifying prices for items on variable basis run the risk of rejection. A bid submitted on a fixed price basis will not be rejected but the price adjustment will be treated as zero.	
10.	Clause 13 at page 98 of Bid document.	Be read as	
	The road cut should be properly filled up with material excavated from there that should be suitably rammed and compacted so that there is no hindrance to traffic and also follow all the instructions as per the road cut permission obtained from the department/other authorities.	The road cut should be properly filled up with material excavated permission obtained from the department/other authorities.  Bidder scope shall be limited to road cutting, back filling stacking and compaction of excavated area using excavated material only. However restoration of road/ site to desired condition shall be done by the NDMC.	
11.	clause 6 at page 104 of Bid document	Be read as:	
	Removal of malba/extra earth & stacking at proper place at regular intervals of about 50 mtrs.(Approx.)	During laying of cable, in day time extra earth / malba shall be stacked at proper place at regular intervals of about 50 mtr. (Approx.). To clear the site, extra malba/ earth shall be lifted in Night for disposed in dumping ground.	
12.	clause 1 at page 106 of Bid document	Be read as:	
	The tenderer shall possess his own machine and should submit the authentic proof of the same.	The bidder may hire HDD (horizontal directional drilling) machine. During execution of work, if any damage occurred to any service over and underground due to machine, the penalty charges shall be recovered from the lead bidder.	
13.	Clause 3 at page 106 of bid document.	Be read as:	
	The contractor shall use only ISI marked HDPE pipes during the course of execution of work.	The contractor shall use only ISI marked, PN4 class HDPE pipes manufactured with thickness and material grade PE80 as per IS:4984:95 and upto latest amendment thereof.	
14.	New clause C & D at page 107 of Bid document	New clause	
		New Clause "C"	
	New clause		
		WCT and LabourCess shall be deducted as per prevailing rates only on cable laying work from the each running bill and final bill (Part B and Part C of price schedule).	
	T		
		New Clause "D"	



		Taxes.
		Income tax and other statuary taxes shall be deducted as per prevailingrate from the Gross amount of each running bill and final bill.
15.	Clause 5.2 at page 111 of bid document.	Be read as
	All Power Cables shall be supplied in drum length of 250 m. Each drum shall contain one continuous length of cable. Owner shall have the option of rejecting cable drums with shorter lengths. The cable length per drum is allowed a tolerance of +5%. The total quantity variation of length shall not be more than +-2%	rejecting cable drums with shorter lengths. The
	Where the ordered quantity is not multiple of 250 m and the incremental quantity is very small, the same may be included in one of the drums. Otherwise, an additional length for the incremental quantity will be supplied.	Where the ordered quantity is not multiple of 500 m, as the case may be, and the incremental quantity is very small, the same may be included in one of the drums. Otherwise, an additional length for the incremental quantity will be supplied.
16.	Clause 4.4 at page 120 of bid document.	Be read as
	SHEATH:	
	The sheath shall be suitable to withstand the site	SHEATH:
	conditions and the desired temperature. It should be of adequate thickness, consistent quality and free from all defects. The PVC sheath shall be extruded as per IS:7098 (Part – I/1988). IEC:60502 Part–I,BS:6622, LSOH to BS:7835.	The sheath shall be suitable to withstand the site conditions and the desired temperature. It should be of adequate thickness, consistent quality and free from all defects. The PVC sheath shall be extruded as per IS:7098 (Part – I/1988).
17.	Clause 4.6 at page 120 of bid document.	Po wood on
	OUTER SHEATH: Extruded PVC ST2, outer sheath as per IS:5831/1984, IS:7098Part 1, IEC:60502 Part - 1, BS:6622, LSOH to BS:78 35. shall be applied over armoring with suitable additives to prevent attack by rodents and termites. Outer sheathing shall be designed to offer high degree of mechanical protection and shall also be heat, oils, chemicals, abrasion and weather resistant. Common acids, alkalis, saline solutions etc., shall not have adverse effects on the PVC sheathing material used.	OUTER SHEATH: Extruded PVC ST2, outer sheath as per IS:5831/1984, IS:7098Part 1, shall be applied over armoring with suitable additives to prevent attack by rodents and termites. Outer sheathing shall be designed to offer high degree of mechanical protection and shall also be heat, oils, chemicals, abrasion and weather resistant. Common acids, alkalis, saline solutions etc., shall not have adverse effects on the PVC sheathing material used. All cable shall be flame retardant (FR).
18.	Clause 9.2 at page 123 of bid document.	Be read as
	The minimum number of wires shall be 53 for circular compacted 400sq.mm aluminum conductor as per table -2 of IS 8130/1984	The minimum number of wires for all cables shall be as per table -2 of IS 8130/1984
10	Clause 22 at page 127 of bid document.	Be read as
19.		
19.	CABLE LENGTHS:	CABLE LENGTHS:
19.	CABLE LENGTHS:  The cables shall be supplied in continuous lengths of 500 m with 5% tolerance for cable size upto 185 sq.mm and 250 m with 5 % tolerance cable size above 185 Sq. mm .The cable shall on the wooden drums only.	CABLE LENGTHS: The all LT power cables shall be supplied in drum length of 500 mtr. With $\pm$ tolerance of 5% in each drum. The cable shall on thewooden drums only. The total quantity of variation of length shall not be more than $\pm$ 2%.
20.	The cables shall be supplied in continuous lengths of 500 m with 5% tolerance for cable size upto 185 sq.mm and 250 m with 5 % tolerance cable size above 185 Sq. mm .The cable shall on the wooden	The all LT power cables shall be supplied in drum length of 500 mtr. With ± tolerance of 5% in each drum. The cable shall on thewooden drums only. The total quantity of variation of length shall not



		14001 certifications. True copy of ISO certifications issued to the manufacturing firm shall be submitted in the bid by bidder.	
21.	4th (New para) from the top of page 135 of Bid document.	All routine and acceptance test prescribed in relevant IS for HDPE pipe shall be conducted at the manufacturer works before dispatch of each lot of HDPE pipe. For this purpose the contractor/lead partner shall give fifteen days advance notice for inspection. NDMC shall bear expenses for inspection, but all the cost on account of conducting test shall be borne by the contractor.  If material fails during inspection, all the expenses of the failed inspection as well as subsequent inspections thereof shall be borne by the contractor.	
22.	Special Conditions/Clause 23/Page no-100	Be read as	
	For routine and acceptance test, the manufacture should have in house NABL accredited lab & documentary proof be submitted along with the bid.	a) The routine test shall be conducted from NABL accredited lab for each lot of the cable before raising inspection call. The same shall be produced to the employer during inspection of particular lot of cable.	
		b) The manufacturing company of LT and HT cable should have ISO 9001 & ISO 14001 certifications. True copy of ISO certifications issued to the manufacturing firm shall be submitted in the bid by bidder.	
23.	New clause 26 in Special Conditions at Page 100 New clause	New clause  Bidder shall furnish the information of the document submitted along with bid in the check list enclosed at "Annexure -X".	

The other terms and conditions of bidding document will remain same.

Sd/-Executive Engineer (IPDS) Email:- eeipds.elect@ndmc.gov.in



## CHECK LIST

Bidder shall furnish following information of the document submitted along with bid.

	As per bid document	Brief Description of documents, enclosed	Reference page no.
1.	Proof of manufacturing both type of cable i.e 1.1 KV voltage level	with bid	
2.			
3.	100.5001 CEI UII COUOTI OF CANIE Manufacturin - 6		
i.	150.17001 Certification of cable manufacture of		
	Power of attorney for lead member of consortium. ( In case of consortium)		
	Joint Bidding Agreement. ( In case of consortium )		
	Completion certificate in R/O S.No. 3 of corrigendum.		
	Electrical Contractor License		
	Copy of Registration Under DVAT A Lease		
0.	Copy of Registration Under DVAT Act 2004/undertaking.		
1.	C.A. certified copy of Financial Turnover during the last three years ending 31 March 2016.	1	
	C.A.certified copy of Net worth during the last three years ending 31 March 2016.		
2.	Solvency of Rs. 15,87,33,202/-		
3.	Integrity pact		
	Registration of Contractor under BOCW/ Affidavit		
5.	GTP for 11 KV grade HT XLPE insulated cable of size 400sq.mm / 3		
	GTP of 1.1 KV grade LT XLPE insulated cable of size 400sq.mm/3.5		
	GTP of 1.1 KV grade LT XLPE insulated cable of size 185sq.mm/3.5		
	GTP of 1.1 KV grade LT XLPE insulated cable of size 95sq.mm/3.5		
	GTP of 1.1 KV grade LT XLPE insulated cable of size 50sq.mm/3.5		
	GTP of 1.1 KV grade LT XLPE insulated cable of size 25sq.mm/3.5		
	SC 9001 certification of H.S. hatched cable of size 16sq.mm/4 C.		1.75%
n	nanufacturing firm		
IS n	SO:14001 certification of H.S. type jointing and termination kit nanufacturing firm		
S	chedule of deviation.		
T	ype test for 11 KV grade HT cable as per clause 6 given in nnexure 'B' at page 110 of bid document as under.		
Si ha	ppe Tests (For type test, certificates from CPRI / ERDA esting Laboratories for 11 kV XLPE cable shall be ubmitted along with purchase order. The type test should ave been conducted not later than five years on the date supply).		
Th	ne following shall constitute type tests:		
i)T	ests on conductor		
b.7	Annealing test (for copper) Fensile tests (for aluminum) Vrapping tests (for aluminum) Resistance test		
iii)	Tests for armouring wires/strips Test for thickness of insulation and sheath Physical tests for insulation		
a.T	ensile strength and elongation at break		



b.Ageing in air oven c.Hot test d.Shrinkage test e.Water absorption (gravimetric) v)Physical tests for out sheath a. Tensile strength and elongation at break b.Ageing in air oven c.Hot test d.Shrinkage test vi)Bleeding and blooming tests (for outer sheath) vii)Partial discharge test viii)Bending test ix)Dielectric power factor test a.As a function of voltage b.As a function of temperature x)Insulation resistance (volume receptivity) tests xi)Heating cycle test xii)Impulse withstand test xiii)High voltage test xiv)Flammability test 26. Type test for all 1.1 KV grade LT cables as per clause 16 given in Annexure 'C' at page 124 of bid document as under. Test method Ref Part no of IS: 10810 Requirement Test Tests on conductor IS:8130 Tensile test IS:8130 3 Wrapping test IS:8130 4 Resistance test Clause 15.2 & 36 to 42 Tests for armoured wires and strips Clause 4.3, 14.2 & 6 Test for thickness of insulation and 16.2 Clause 4.2 Physical tests for insulation: Tensile strength and elongation at ii) Aging in air oven 30 ii) Hot test 12 v) Shrinkage test 33 v) Water absorption (gravimetric) IS: 5831 Physical tests for outer sheath 7 ) Tensile strength and elongation at 11 ii) Aging in air oven 12 Shrinkage test Hot deformation Clause 22.7 45 High voltage test Clause 22.8 53 Flammability test Copy of valid BIS License for cable for ISI marking as per clause 27 27. of Annexure 'C' at page 127 of bid document.

