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Note: The bidders, in their own interest are requested to read very carefully Section-I (Instruction to Bidders), Section-II (General Condition of Contract) & Section-III (Technical Specification) before filling the bid. The Bid documents be downloaded from JVVNL website www.jaipurdiscom.in . No hard copy of the bidding documents will be provided to the bidders through this office. In case of any discrepancy found in the bidding documents downloaded from the website and appended with the bid (as a bid document) and the original copy of such document available in the office of Superintending Engineer(Proc), Jaipur discom, Jaipur then the copy available with Superintending Engineer(Proc), Jaipur discom, Jaipur will be considered as final document for all purposes. The cost of Bid document as published in NIT shall be furnished along with downloaded bid document in the manner prescribed in bid document.

VERY VERY IMPORTANT

(i) The bidders in their own interest are advised to go through the complete Specification carefully.

(ii) The material to be purchased against above Tender is meant for three Discoms of Rajasthan i.e. Jaipur / Ajmer / Jodhpur Discoms.

The Bidders are required to quote the price for delivery of material any where in Rajasthan State in the Stores of JVVNL / AVVNL / Jd. VVNL.

(iii) In case of successful bidders, the purchaser reserves the right to distribute quantity awarded among JVVNL / AVVNL / Jd. VVNL in the ratio of their requirement & each Discom will issue separate purchase orders for which bidder will have to furnish separate BGs in JVVNL / AVVNL / Jd. VVNL (as the case may be). However, for opening of tender, the bidder should be registered vendor in either of JVVNL / AVVNL / Jd. VVNL or furnish requisite EMD.

(iv) Clause No.1.12.3 (c) & 1.12.4 of Instruction to bidders stands amended as under:

(a) Existing Qualification Requirement for minimum quantity to be quoted is reduced to one third.

(b) Counter offer will be given to all responsive bidders.

**JAIPUR VIDYUT VITARAN NIGAM LIMITED
(PROCUREMENT CIRCLE)
OLD POWER HOUSE PREMISES, BANI PARK, JAIPUR -06**

TELEPHONE: 2208098

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**TENDER DOCUMENTS FOR PURCHASE OF ACSR AND AAA CONDUCTOR
AGAINST SPECIFICATION NO.JPD/SE/PROC./SPO.I/TN-4314**

S.No.	Name of Item	Quantity (Approx)
1	ACSR Weasel Conductor	132000 Kms.
3	ACSR Dog Conductor	27573 Kms.
5	AAA Conductor (Equivalent size of ACSR Weasel)	132000 Kms.

LAST DATE AND TIME FOR : 28.3.2011 UPTO 2.30 P.M.
RECEIPT OF BID

DATE AND TIME OF : 28.3.2011 AT 3.00 P.M.
OPENING OF BID

EARNEST MONEY TO BE : RS.10,00,000/-
DEPOSITED

COST OF THE : RS.2,500.00(non refundable)
SPECIFICATION

VALIDITY : 120 DAYS FROM THE NEXT DATE
OF OPENING OF TECHNO-
COMMERCIAL BID.

NOTE : The bidders, in their own interest are requested to read very carefully Section-I (Instruction to Bidders), Section-II (General Condition of Contract) & Section-III (Technical Specification) before filling the bid. The Bid documents be downloaded from JVVNL website www.jaipurdiscom.in . No hard copy of the bidding documents will be provided to the bidders through this office. In case of any discrepancy found in the bidding documents downloaded from the website and appended with the bid (as a bid document) and the original copy of such document available in the office of Superintending Engineer(Proc), Jaipur discom, Jaipur then the copy available with Superintending Engineer(Proc), Jaipur discom, Jaipur will be considered as final document for all purposes. The cost of Bid document as published in NIT shall be furnished along with downloaded bid document in the manner prescribed in bid document.

VERY VERY IMPORTANT

(i) The bidders in their own interest are advised to go through the complete Specification carefully.

(ii) The material to be purchased against above Tender is meant for three Discoms of Rajasthan i.e. Jaipur / Ajmer / Jodhpur Discoms.

The Bidders are required to quote the price for delivery of material any where in Rajasthan State in the Stores of JVVNL / AVVNL / Jd. VVNL.

(iii) In case of successful bidders, the purchaser reserves the right to distribute quantity awarded among JVVNL / AVVNL / Jd. VVNL in the ratio of their requirement & each Discom will issue separate purchase orders for which bidder will have to furnish separate BGs in JVVNL / AVVNL / Jd. VVNL (as the case may be). However, for opening of tender, the bidder should be registered vendor in either of JVVNL / AVVNL / Jd. VVNL or furnish requisite EMD.

(iv) Clause No.1.12.3 (c) & 1.12.4 of Instruction to bidders stands amended as under:

(a) Existing Qualification Requirement for minimum quantity to be quoted is reduced to one third.

(b) Counter offer will be given to all responsive bidders.

SECTION-III

TECHNICAL SPECIFICATION FOR ACSR AND AAA CONDUCTOR AGAINST TN-4314

1. SCOPE

1.1 This section provides for manufacture, testing before **dispatch, supply and delivery anywhere in Rajasthan in the stores of JVVNL/AVVNL/JDVVNL**. F.O.R Destination of Aluminum Conductor, Galvanized Steel reinforced (ACSR) and all Aluminum Alloy Conductor (AAAC) for satisfactory operation in various lines and sub-stations. The conductor should conform to latest IS. The requirement of various type of Conductor shall be as per Schedule of Requirement Annexed with this Section at Schedule-I. It may be noted that the requirement indicated in the Schedule is tentative and may vary at the time of placement of order.

1.2 Aluminum Conductor with galvanized Steel re-enforcement shall be conforming to IS: 398(Pt.2)/1996 and All Aluminum Alloy Conductor conforming to IS-398 (Part.4)/1994 with latest amendments if any, supplied on non returnable strong wooden drums generally conforming to IS: 1778/1981 (Latest).

The bidders should be a manufacturer of offered Conductor. The Offers from sole selling agents / authorized dealer shall not be entertained. The firms (manufacturers) must possess valid ISI License for the offered Conductor. The technical bid of the bidders shall be considered for opening in absence of non-furnishing of above required ISI License along with the bid. However, price bid of the responsive bidders shall only be opened if bidder furnishes above required ISI License up to the official working hours of one working day prior to the scheduled / notified date of opening of price bid, failing which price bid of the bidder shall not be opened. The bids from trading firms shall not be considered.

2. CLIMATIC CONDITIONS:

- | | |
|--|-------------|
| i) Peak ambient temperature
in shade. | 50 deg.C |
| ii) Maximum average ambient
temperature in a 24 hours period
in shade. | 40 deg.C |
| iii) Min. ambient air temperature in shade | (-) 5 deg.C |
| iv) Maximum temperature attainable
by an object exposed to sun. | 60 deg.C |
| v) Maximum relative humidity. | 100% |
| vi) Average number of thunder
storm days per annum. | 40 |

vii) Average number of rainy days per annum.	100
viii) Average annual rainfall	10 to 100 cm
ix) Number of months of tropical Monsoon conditions.	4 months
x) Maximum wind pressure.	100 kg/ sq. mm.
xi) Altitude not exceeding	1000 M

3. GENERAL TECHNICAL REQUIREMENT OF ACSR CONDUCTORS:

The technical particulars shall be furnished strictly in the Performa attached at Schedule-V-A of this specification. The specific values must be indicated against each column and no 'dash', 'dot', 'blank' or as per IS word should be indicated in this schedule. The technical suitability shall be adjudged from the values furnished in the clause 3.2 "PRINCIPAL PARAMETERS".

The ACSR conductor shall comply in all respect with IS: 398(Part.2)/1996 with latest amendment, if any from the date of its applicability. Any departure from the strandard be indicated in Schedule-III

3.1 MATERIAL

The material offered shall be of the best quality and workmanship. The conductor shall be constructed from hard drawn aluminum and galvanized steel wires which have the mechanical and electrical properties specified in Tables 1 & 2 of IS:398(Part.2)/1996 with latest amendment, if any, The Zinc coating on the galvanized steel wires may be applied in accordance with IS:4826/1979 with latest amendment if any. The EC Grade Aluminum rods for use in the manufacture of Aluminum Wires shall conform to IS:5484/1978 amended up to date. The zinc used for galvanizing shall be Electro type High Grade Zinc not less than 99.95 percent purity. It shall conform to and satisfy all the requirements of IS:209/1992 amended up to date. Galvanized Steel Wire should comply mechanical properties as per Table 2 of IS:398 (Part.2)/1996 amended up to date. The chemical composition is as per Annexure-C of IS:398 (Part.2)/1996 amended up to date.

3.2 PRINCIPAL PARAMETERS:

The details of ACSR conductors are tabulated below:-

PARTICULAR	ACSR Weasel	ACSR DOG
a) Stranding and wire diameter (mm)	6/2.59 Al. 1/ 2.59 St.	6/4.72 Al. 7/1.57 St.
b) Number of strands Central Steel wire Aluminium	1 6	7 6
c) Sectional area of aluminium(Sq. mm)	31.61	105
d) Total Sectional area (Sq. mm)	36.88	118.5
e) Overall diameter (mm) (Approx.)	7.77	14.15
f) Weight (Kg/Km) (Approx.)	128.00	394.00
g) Calculated max. DC resistance at 20 Deg. C (Ohm./ Km.)	0.9289	0.2792
h) Approx. calculated breaking load (KN)	11.12	32.41
i) Modulus of elasticity (GN/Sq. meter)	79	75
j) Coefficient of liner Expansion per deg C.	19.1×10^{-6}	19.8×10^{-6}

3.3 The details of aluminum strands are as follows:

PARTICULAR	ACSR Weasel	ACSR Dog
a) Min. Breaking load of strand before stranding (KN)	0.89	2.78
b) Min. Breaking load of strand after stranding (KN)	0.85	2.64
c) Max. D.C. Resistance of strand at 20 Deg. C (ohm/Km.)	5.490	1.650
d) Diameter mm Nominal Minimum Maximum	2.59 2.56 2.62	4.72 4.67 4.77
e) Mass (Kg/Km.)	14.24	47.30

3.4 The details of steel strands are as follows:

PARATICULAR	ACSR Weasel	ACSR Dog
i) Min. Breaking load of strand before stranding (KN)	6.92	2.70
ii) Min. Breaking load of strand after stranding (KN)	6.57	2.57
iii) Diameter mm a) Nominal b) Max./Min	2.59 2.64/2.54	1.57 1.60/1.54
iv) Zinc coating testing	2 dips of 1 min. each & 1 dip. of ½ min.	2 dips of 1 min. each
v) Min. weight of zinc coating GM/ Sq. Mtr.	218.50	180.50
vi) Mass of strand at normal diameter of strand(Kg./Km.)	41.09	15.10

3.5 Tolerance on normal sizes:

The tolerance in diameter of aluminum wires and steel wire used in the manufacture of ACSR shall be allowed as per IS: 398/ (Part-2) /1996 amended up to date.

3.6 Stranding :

3.6.1 The wires used in the construction of a galvanized steel reinforced aluminum conductor shall before stranding, satisfy all the relevant requirements of this specification and relevant IS.

3.6.2 The lay ratio of the different layers shall be within the limits given:

S. No.	Particulars	ACSR WEASEL	ACSR DOG
1	Number of wires : a) Aluminum b) Steel	6 1	6 7
2	Ratio of aluminum Wire dia-meter to Steel wire dia-meter	1	3
3	Lay ratio for aluminum Wires (Outer most layer): a) Minimum b) Maximum	10 14	10 14
4.	Lay ratio for steel core (6 wire layer) a)Minimum a) Maximum	- -	13 28

NOTE: For the purpose of calculation, the mean lay ratio shall be taken as the arithmetic mean of the relevant minimum and maximum value given in this table.

4.0 GENERAL TECHNICAL REQUIREMENT OF AAA CONDUCTOR:

The technical particulars shall be furnished strictly in the Performa attached at Schedule-V-B of this specification. The specific values must be indicated against each column and no 'dash', 'dot', 'blank' or as per IS word should be indicated in this schedule. The technical suitability shall be adjudged from the values furnished in the clause 4.2 "PRINCIPAL PARAMETERS".

The AAA conductor shall comply in all respect with IS: 398(Part.4)/1994 with latest amendment, if any from the date of its applicability.

4.1 MATERIAL :

Material offered shall be of the best quality & workmanship. The wires shall be of heat treated aluminum, magnesium Silicon Alloy having a composition appropriate to the mechanical & electrical properties specified in Table 1 of IS – 398 (Part-4) / 1994 with latest version if any.

4.2 PRINCIPAL PARAMETERS:

The details of AAA Stranded Conductor are tabulated below:

S. No.	Particulars	AAA Conductor (Equivalent size of ACSR Weasel)
1.	Nominal Aluminum Alloy Area	34 Sq. mm
2.	Stranding and Wire dia	7/2.50 mm
3.	Cross Sectional Area of Conductor	34.36 Sq. mm
4.	Approximate overall Dia	7.50 mm
5.	Approximate Mass	94.00 Kg. / Km.
6.	Calculated Resistance at 20 Deg. C (Max.)	0.990 Ohms/Km.
7.	Approximate Breaking Load	10.11 KN

4.3 The properties of Aluminum Alloy Wires to be used in the construction of the stranded conductor shall be as follows:

S. No.	Particulars	AAA Conductor (Equivalent size of ACSR Weasel)
1.	Dia Meter a) Nominal b) Minimum c) Maximum	2.50 mm 2.47 mm 2.53 mm
2.	Cross Sectional Area of nominal dia wire	4.909 Sq. mm
3.	Mass	13.25 Kg./Km.
4.	Minimum Breaking Load after stranding	1.44 KN
5.	Resistance at 20 Deg. C (Max.)	6.845 Ohm/Km.

4.4 TOLERANCES ON NORMAL SIZES:

A tolerance of +/- 1% shall be permitted on the nominal dia meter specified in Table 1 of IS-398 (Part-4)/1994 with latest version if any.

4.5 STRANDING

4.5.1 The wires used in the construction of stranded AAA Conductor shall before and after stranding satisfy all the relevant requirement of IS-398 (Part-4)/1994 with latest version if any.

4.5.2 The lay ratio of different layers shall be within the limits given below:

Number of Wires in AAA Conductor	Lay Ratio	
	Minimum	Maximum
7	10	14

The outer layer shall be right handed. The wires in each layer shall be evenly and closely stranded.

5. TESTS (FOR ACSR CONDUCTOR):

TESTS BEFORE DESPATCH: The ACSR Conductor shall be subjected at manufacturer's works before dispatch, to the tests mentioned here-under as per IS: 398 (Part-2)/1996 with latest amended.

5.1 ROUTINE TESTS:

The following tests shall be conducted before and after stranding on each drum of the conductor by the manufacturer at his works as per relevant standard IS: 398 (Part-2)/ 1996 (latest amended)

- a) Visual & dimensional check on drum as per specification.
- b) Visual check for joints, scratches etc. and length of conductor by re-winding of conductor on empty drum as per Specification/ IS.
- c) Measurement of dia-meter of individual Aluminum and steel wires. (Clause-13.2)
- d) Measurement of Lay Ratio. (Clause-13.8)
- e) Breaking load of individual wires (Clause-13.3.1)
- f) Ductility Test (Clause-13.4)
- g) Wrapping Test (Clause-13.5)
- h) Resistance Test (Clause-13.6)
- i) Galvanizing Test (Clause-13.7)
- j) Any other test as per relevant IS

5.2 ACCEPTANCE TESTS:-

The following tests shall be conducted on samples taken at random from a lot as per relevant standard IS: 398 (Part-2)/1996 (Latest amended) in presence of purchaser's representative:-

- a) Visual & dimensional check on drum as per specification.
- b) Visual check for joints, scratches etc. and length of conductor by re-winding of conductor on empty drum as per Specification / IS.

- | | | |
|----|--|-----------------|
| c) | Measurement of dia-meter of individual Aluminum and steel wires. | (Clause-13.2) |
| d) | Measurement of Lay Ratio. | (Clause-13.8) |
| e) | Breaking load of individual wires | (Clause-13.3.1) |
| f) | Ductility Test | (Clause-13.4) |
| g) | Wrapping Test | (Clause-13.5) |
| h) | Resistance Test | (Clause-13.6) |
| i) | Galvanizing Test | (Clause-13.7) |

6.0. TEST FOR AAA CONDUCTORS:

6.1. **TESTS BEFORE DESPATCH:** The AAA Conductor shall be subjected at manufacturer's works before dispatch, to the tests mentioned in IS: 398 (Part-4)/1994 with latest version if any.

6.2. Following acceptance tests shall be conducted on samples taken in presence of purchaser's representative as per Clause No.12.1.2 of IS-398 (Part-4)/1994 with latest version if any.

(A) Breaking Load test as per Clause No.12.2 of IS-398 (Part-4)/1994

(B) Elongation Test as per Clause No.12.3 of IS-398 (Part-4)/1994.

(C) Resistance test as per Clause No.12.4 of IS-398 (Part-4)/1994.

In addition to above following tests shall also be carried out as acceptance tests at the works of firm during inspection:

- a) Visual & dimensional check on drum as per specification.
- b) Visual check for joints, scratches etc. and length of conductor by re-winding of conductor on empty drum as per Specification / IS.
- c) Measurement of dia-meter of individual Aluminum Alloy Wire.
- d) Measurement of Lay Ratio.

7.0 TYPE TESTS (ACSR & AAA CONDUCTORS):-

The type test in respect of ACSR Weasel, & AAA Conductor is already covered under Acceptance Tests, thus requirement of furnishing type test for ACSR Weasel and AAA Conductor is not essential along with Bid. However, for ACSR Dog Conductor, the bidders shall furnish the type test report along with bid as detailed at **Schedule-III A " Pre-Qualification Requirement" (PQR)** as per relevant IS:398 Pt.2)/1996 with latest amendment along with bid **only for those tests which are not covered under acceptance test.**

The following shall constitutes type test which are to be conducted on the samples taken from Three Drums of the conductor as per relevant IS:398 (Pt.2)/1996 with latest amendment:

- a) Stress – Strain Test (Clause No.13.11 of ISS).
- b) Surface Condition Test (clause No.13.9 of ISS).
- c) Ultimate Breaking Load Test (Clause No.13.10 of ISS).

7.01 Where the bidder furnishes B.G. against Type Test in terms of conditions mentioned in Schedule-III “A” ‘ Pre Qualification Requirement (PQR).

One sample of 15 Mtr. Length from the 1st Lot of ACSR DOG Conductor as received in purchaser’s store shall be selected and sealed in the presence of representative of supplier for getting it type tested from a Govt. / Govt. approved / Govt. Recognized / NABL Accredited laboratory / ILAC Accredited laboratory (Suppliers own lab shall not be considered for the purpose of type test). **The selected and sealed sample for type test shall be identified by providing Polycarbonate Seals on both ends of conductor and two stickers seals provided along the length of the conductor.** The transportation charges of sample from store to test house shall be borne by NIGAM, whereas the charges incurred towards type test of the material at test house shall be borne by the Supplier. **The testing charges should be remitted through D.D. in favour of Test House. Name of Test House shall be intimated separately by purchaser.**

In case sample from first lot fails then:

a) Supplier shall have to replace the full quantity of the respective inspected lot supplied to various stores and lying unused at stores.

b) For the quantity already utilized against the order in field a deduction of @30% (Thirty Percent) of F.O.R. Destination price of the material supplied shall be made.

c) Sample from next lot shall be selected again for type test. All test charges incurred towards type test of the material for second time shall be borne by the Supplier.

d) In case the 1st sample fails, the supplier shall have to pay the type test charges again for testing house for which the testing charges should be remitted through D.D. in favor of Test House by the supplier with the 2nd inspection offer.

In case sample again fails in the type test then:

a) The quantity lying unused at various stores shall be rejected.

b) For the quantity already utilized against the order in field a deduction of @30% (Thirty Percent) of F.O.R. Destination price of the material supplied shall be made.

c) Further supplies shall not be accepted.

“At the option of purchaser, the material received in the stores may be utilized in the field after receipt of successful test report from CTL, Jaipur for the mandatory test checking on the samples selected from the material received at stores against first lot and subsequent lot(s) in anticipation of successful type test report(s).”

NOTE:

1. The 70% payment shall be released after receipt of successful Test reports from CTL, Jaipur for the mandatory testing checking on the samples selected from the material received at stores against first lot and subsequent lot(s) in anticipation of successful type test reports.

2. The balance 30% payment shall be released after receipt of successful type test reports on the samples selected from the material received in the stores.

8.0 SAMPLING PLAN (FOR ACSR & AAA CONDUCTOR):

8.1. Samples for Acceptance Tests: Samples shall be taken as per relevant IS i.e. IS-398 (Part-2)/1996 or IS-398 (Part-4)/1994 with latest version as the case may be.

8.2 Apart from the sample selected for carrying out Acceptance Tests at the works of the firm during inspection, **one more sample from each length be also selected out of one drum under re-winding for carrying out various Acceptance Tests as per relevant IS. If any of the sample so selected from each length failed in any acceptance test the entire lot under inspection is not acceptable.**

8.3 TOLERANCE ON TEST RESULTS:

Tolerance on test results shall be allowed as per relevant IS/Spec. whichever is more stringent.

9.0 INSPECTION

9.1 (a) The conductor shall be manufactured in accordance with latest edition of IS: 398(Part.2)/1996 or IS-398 (Part-4)/1994 with all subsequent amendments issued from time to time for ACSR Conductor or AAA Conductor respectively. All the tests as laid down in the above mentioned specification on individual aluminum wire and steel wire or Aluminum Alloy Wire as the case may be shall be carried out. The testing shall also include the tests on manufactured finished conductor. Moreover the supplier shall also furnish test certificate(s) of raw materials to the inspecting officer at the time of inspection. The inspection & testing shall be governed by Clause No.1.27 of Section-II (General Condition of Contract).

(b) The supplier / manufacturer must offer conductor for inspection through a letter of offer mentioning size and quantity of the conductor along with Packing List duly signed indicating drum Serial No. individual lengths total length, net weight & gross weight in DUPLICATE. This letter of offer shall be addressed to this office. The packing list shall also be furnished to the Inspecting Officer prior to carrying out the inspection at the works.

(c) The Manufacturer shall provide all adequate facilities at his works for inspection of at least one number conductor drum or 5% conductor drums offered for inspection whichever is higher selected at random by the authorized representative of the purchaser for checking / verification of conductor length/ manufacturing defects by transferring the conductor from one drum to the another empty drum and at the same time measuring the length and lay ratio of

each conductor length so transferred by means of the standard calibrated and sealed meter.

(d) If the firm is not having the necessary facilities for carrying out the required tests as per relevant IS / Purchase Order, the supplier will arrange such testing facilities in some other Government laboratory and shall bear the cost so incurred. But in such cases firm shall inform to the purchaser in advance before commencement of supplies.

(e) The supplier shall provide adequate facilities for weighing of all the drums offered for inspection.

(f) The purchaser has every right for rewinding of conductor drums at stores / site in part or full after receipt of material. If at any time, shortage in lengths than the declared /marked length(s) is observed in any of the drum of the particular lot, the maximum length of shortage so observed in rewind drum shall be deducted from all the drums inspected / dispatch lot. If any inspected lot is consigned to more than one consignee the maximum shortage so observed during rewinding, in respect of any consignee will be deducted from the complete inspected / dispatched lot. However, the purchaser shall intimate in advance to the supplier program me of rewinding to depute their representative to witness rewinding, if supplier desires so. If the supplier does not depute their authorized representative, the rewinding shall be done by store organization in presence of representative of purchaser nominated by the circle Superintending Engineer, Discoms. At the time of receipt of material in store/rewinding in store, if any defect /shortage is found the purchaser shall have every right to deduct the cost of defective / short material or reject the entire lot.

9.2 In case of testing after re-offering as per Clause No.15 of IS:398 (Part.2)/1996 or Clause No.13 of IS:398 (Part-4)/1994 as the case may be, the lot under reference will be subject to 100% checking, if required by the purchaser.

9.3 The supplier shall present the latest Calibration Certificate(s) of testing instruments / equipments to be used for the testing of the material covered in the Purchase Order to the authorized inspecting officer / inspecting agency of the purchaser. The testing instruments / meters/ apparatus etc. should be got calibrated by the supplier from time to time from Govt. Lab or Independent test laboratory / house having valid accreditation from National Accreditation Board for Testing and Calibrating Laboratories for the testing equipments or original manufacturer having traceability to NABL / NPL or equivalent accredited lab.

The calibration certificate(s) should not in any case be older than one year at the time of presenting the same to the inspecting officer / inspecting agency of the purchaser. The testing instruments / equipments should be duly sealed by the Calibrating Agency and mention thereof shall be indicated in the calibration certificate(s).

9.4 The manufacturer will provide certificates as per the Clause No.7 of IS: 398((Part.2)/1996 "Freedom from defects" and clause No.9 "Joint in Wires" of IS:398 (Part 2) /1996 for ACSR Conductors and the certificates as per Clause No.6 & 8 of IS:398 (Part-4)/ 1994 for AAA Conductors.

10.0 STANDARD LENGTH & VARIATION IN LENGTHS:

10.1 The ACSR & AAA Conductor shall be supplied in the standard length. The standard length of ACSR & AAA Conductor shall not less than the value specified below with a tolerance of (-) 5%. More than the standard length shall be acceptable.

- a) ACSR Weasel - 1500 Mtrs.
- b) ACSR DOG - 1000 Mtrs.
- c) AAA Conductor (Equivalent size of Weasel Conductor) – 1500 Mtrs.

10.2 Short length(s), if any shall not measure less than 80% of standard length as specified above in any case. The total quantity of such short length(s) shall not exceed 5% of the quantity of the lot offered for inspection.

10.3 **The maximum permissible length per drum shall be as under subject to condition that the manufacturer while packing the conductor in drum shall ensure that after winding complete quantity of conductor in drum a uniform space of not less than 100 mm. remains between outer layer of conductor and inner surface of the external protective lagging of the drum. This is essential to ensure that the conductor does not get closer to the lagging and to avoid damaged during transportation/ reeling / unreeling or rolling on the undulated ground / fields:**

- a) **ACSR WEASEL --- 7.5 Kms.**
- b) **ACSR DOG --- 2.4 Kms.**
- c) **AAA Conductor(Equivalent size of Weasel Conductor) --- 7.5 Kms.**

11.0 QUANTITY TOLERANCE:

A quantity tolerance of plus minus 2% shall be allowed on the total ordered quantity.

12.0 QUANTITY:

- a) The quantities as mentioned in the schedule of requirement are tentative & these may increase/decrease as per the requirement of the Nigam **(Schedule-I)**.
- b) Details of offered quantity along with justification with reference to Qualifying Requirement shall be furnished in **Schedule-IVA**

13.0 PACKING FORWARDING AND MARKING:

13.1 The packing shall have to be done as per standard practice worthy of road transport. The conductor shall be wound in strong wooden drums so as to withstand all stresses due to transportation, handling and stringing operation so that there is no damage caused to the conductor during the process of these operations. The wooden drums shall be non-returnable and shall **generally conform IS:1778/1981 with latest amendments, however, the main parameters of the drum shall be as under:**

S.NO.	PARTICULARS	DIMENSION FOR ACSR WEASEL, DOG, CONDUCTOR & AAA CONDUCTOR (EQUIVALENT SIZE OF WEASEL)
1.	Flange Dia	1250 mm (+/- 5%)
2.	Flange Thickness	2x25 mm (+/- 5%)
3.	Barrel Dia	500 mm (+/- 10 mm)
4.	Traverse	510 mm (+/- 10 mm)
5.	Number of Bolts	4 Nos.
6.	Dia of Bolts	12 mm
7.	Bore Dia	80 mm

However, use of seasoned wood shall not be insisted, provided wood used should be of good quality to withstand transportation hazards. The drums shall be having inside flanges painted with Aluminum Paint and with Ordinary White Enamel paint from outside. The conductor on each drum shall be securely fastened at each end. The outer end of the conductor shall be fastened inside the drum against one of the sides of the flanges while it is under tension and shall be such that no looseness is transmitted to the internal layers. The conductor shall be snugly, tightly and uniformly spooled on the drums. The wrapping of conductor on the drums shall be laid snugly against side of the preceding wrap and the first and last wrap in each layer shall fit snugly against the sides of the flanges. Drums shall be lagged with sufficient strong wooden laggings to support the full drum without crushing. The wooden drums after providing lagging shall be fastened by two steel wires of min. 3 mm. Dia over the lagging on the two sides of adequate size to keep the lagging intact and to prevent the drum from crushing/ damage.

Although the various dimension of the drums such as flanges, stretches, traverse and barrel diameter shall depend on the quantity of conductor as offered and agreed upon, on one drum. **The manufacturer while packing the conductor in drum shall ensure that after winding complete quantity of conductor in drum a uniform space of not less than 100 mm. remains between outer layer of conductor and inner surface of the external protective legging of the drum. This is essential to ensure that the conductor does not get closer to the legging and to avoid damaged during transportation/ reeling / unreeling or rolling on the undulated ground / fields.**

13.2 Water proof material shall be wrapped round the barrel and inner surface of flange before winding the conductor and also wrapped round over the conductor completely wounded and under the laggings.

13.3 **The drums shall be marked clearly in block letters with water proof mark having the marking attached to them so that there is no possibility of goods being lost or wrongly dispatched due to faulty marking. The marking shall constitute the following:-**

- a) Name & full address of the consignee.
- b) Destination station.
- c) Serial number of drum.
- d) Size of Conductor with its code name.

- e) Total length of Conductor in drum, with individual length (s).
- f) Number of length(s) in each drum.
- g) Gross mass of drum including the tare mass of drum.
- h) Tare mass of the empty drum with lagging.
- i) Net mass of conductor.
- j) BIS standard mark.
- k) Name of the supplier.
- l) Purchase order reference/TN number.
- m) Date of expiry of warranty / guarantee period.

Besides above, an arrow shall be put on the drum so as to indicate the direction in which the drum can be unwound. The manufacturer shall also provide his own lead seal with distinguishing mark at the outer end of the conductor on each drum before dispatch of the material.

14. PRICES :

- a) The bidder shall quote the Prices in **Schedule-IV** strictly in the manner prescribed in Clause No. 1.09 of Section-I (Instruction to Bidders) & Clause No. 1.33 of Section-II (General Conditions of Contract).
- b) The **prices** quoted shall be **variable as per PV formula** given in the specification at **Clause No.15** without any ceiling with **Base Date** as 1.2.2011 The Price Variation shall be governed by Clause No. 1.10 of Section-I (Instruction to Bidder).

15. PRICE VARIATION FORMULA:

The price of conductor(s) shall be variable without any ceiling, based on the average prices of ex-prime producer of EC grade Aluminum rod and High Tensile Galvanized steel wire in case of ACSR Conductor and Aluminum Alloy Rod incase of AAA Conductor prevailing on 1.2.2011, as per CACMAI Circular. The average price of the EC grade Aluminum wire rod, Aluminum Alloy Rod and price of High Tensile Galvanized steel wire (as the case may be) shall be furnished along with the bid.

No base price other than the prices prevailing on 1.2.2011 as per CACMAI Circular will be acceptable in any case.

No variation shall be allowed on labour, packing, forwarding, freight and insurance charges.

The duties / taxes shall not be allowed on basic price of Aluminum Rods, Aluminum Alloy Rods and Steel Wire, while evaluating the price variation.

Any statutory variation on ED and CST / VAT on the finished conductor shall be payable according to Clause No.1.09.15 of Section-I " Instructions to Bidders".

The Price Variation amount shall be determined as under:

- A. For every one Rupee, increase / decrease per Kg. in the above price of EC grade Aluminum wire Rod, the price per Km. for ACSR Weasel Conductor shall be increase / decrease by @ Rs.87.00.

For every one rupee, increase / decrease per Kg. in the above price of high tensile galvanized steel wire the price per Km. of ACSR Weasel Conductor shall be increase / decrease by Rs.41.00.

- B. For every one Rupee, increase / decrease per Kg. in the above price of EC grade Aluminum wire Rod, the price per Km. for ACSR Dog Conductor shall be increase / decrease by @ Rs.288.00.

For every one rupee, increase / decrease per Kg. in the above price of high tensile galvanized steel wire the price per Km. of ACSR Dog Conductor shall be increase / decrease by Rs.106.00.

- C. For every one Rupee, increase /decrease in the price per Kg. of raw material (Aluminum Alloy Rod) the cost per KM of AAA Conductor increase / decrease by @Rs.94.00.

The above price variation bears no ceiling limit.

The applicable price for claiming price variation on account of change in the price of EC grade Aluminum Wire rod ,Aluminum Alloy Rod and High Tensile Galvanized Steel wire shall be the price prevailing on the delivery date which shall be considered as per Clause No.1.10 of Section-I “ Instructions to Bidders”

The quoted price should be based on the above price variation clause only.

In case there is any decrease in the base price of Aluminum, Aluminum Alloy and Steel, supplier shall give an undertaking in the shape of Indemnity Bond on Non Judicial Stamp Paper of Rajasthan State Government Worth Rs.100/- that such decrease will be immediately accounted for and brought to the notice of the purchaser to revise price accordingly. In case of failure to do so, the purchaser shall be at liberty to recover the excess amount drawn by you from any pending payments due or by operating the Bank Guarantee(s) or in the manner as may be deemed appropriate and expedient.

However, if any amount of Excise duty / Sales tax / VAT is claimed from the JVVNL/AVVNL/JDVVNL and subsequently got refunded back to the supplier from the Government of India / State Government the same shall be refunded to the purchaser within 15 days. Failing which purchase shall be at liberty to recover the excess amount drawn by supplier from any pending payment due or by operating Bank Guarantee(s) or in the manner deemed to be appropriate and expedient.

16.0 MODVAT

The price quoted in the bid offer should be after considering the Modvat benefit.

17.0 OCTROI DUTY

Presently, Octroi duty is not applicable in entire Rajasthan State and JVVNL/AVVNL/JdVVNL is exempted from payment of Octroi Duty. However, if leviable, the same shall be borne by the Nigam at actual and shall be payable by the consignee or the Sr. A.O.(CPC) JVVNL, Jaipur on production of original cash receipt provided the GTR is prepared in favor of Jaipur Vidyut Vitaran Nigam Limited and not on "SELVES" basis.

18.0 PAYMENTS

The payment shall be governed by the provisions of the General Conditions of Contract and shall be released after receipt of successful test report from Nigam's (CTL) on the samples selected from the material received in stores as per clause No.20.

19.0 DELIVERY:

The bidder is required to quote monthly delivery in Schedule-VIII. The delivery of quoted quantity of each type of conductor should be **commenced after 30 days from the date of receipt of purchase order and shall be completed in 09 (Nine) months thereafter at equal monthly installments for each type of conductor.** In case of ordered quantity is different than the quoted quantity, then monthly delivery shall be adjusted proportionately. **Bids of bidders in which monthly delivery schedule is not quoted shall be considered as Non Responsive.**

20.0 TEST CHECKING OF MATERIAL AT STORES:

i) **Sample drums from the material received at stores shall be selected for testing at CTL as per sampling plan given hereunder in presence of firm's representative.**

ii) **The selected sample drum for CTL testing shall be identified by the seals provided by Inspecting Officer / Inspecting Agency during pre-dispatch inspection at firm's works and these sealing details shall be invariably mentioned in the selection Memo by the nominated officers of Nigam.**

iii) The tests in the Nigam Testing laboratory (CTL) shall be conducted in the presence of representative of supplier for which a 7 days notice shall be issued through Fax / Speed Post stating Date & Time to the firm, so that supplier can depute their representative to witness the test. In case the supplier or his representative does not turn up the testing shall be proceeded & completed. **The payment shall be released only after receipt of successful CTL test reports** for the samples selected at purchaser's stores for mandatory test checking the samples to be selected from material received at Nigam's stores by officers to be nominated by Circle SE's / SE (I&S) for testing at CTL.

20.1 SAMPLING

Selection of samples from the material received at stores shall be done as soon as material received in stores in the presence of representative of supplier.

One number Drum out of each lot / sub-lot of 20 Nos. Drums or part thereof for the material received in Stores of Nigam. The selected sample drum / drums shall be transported to CTL by concerned ACOS / SS.

In case of selection of sample for type test the length of the sample shall be of 15 Mtrs. The selected and sealed sample for type test shall be identified by providing polycarbonate seals on both ends of conductor and after forming the coil of conductor two stickers seals provided around the coil.

20.2 TESTS

20.2.1. The following tests shall be carried out as per relevant Clause of latest IS-398 (Part2)/1996 on each selected drum by drawing sample of 5 Mtrs. at CTL from random distance from any length of the selected drum of ACSR Conductor during rewinding:

- a) Rewinding test (Measurement of Length and weight) & Checking of Manufacturing defects.
- b) Measurement of lay ratio during rewinding of Conductor Drum.
- c) Dia. of Aluminum Strands and Steel Wires.
- d) Breaking load test.
- e) Resistance Test.
- f) Galvanization of steel wire (Uniformity) and Mass of Zinc Coating.
- g) Verification of Water Proof marking on Drum as per Specification.

20.2.2 The following tests shall be carried out as per relevant Clause of latest IS / Specification on each selected drum by drawing sample of 5 Mtrs. at CTL from random distance from any length of the selected drum of AAA Conductor during rewinding:

- i) Rewinding test (Measurement of Length and weight) & Checking of Manufacturing defects.
- ii) Measurement of lay ratio during rewinding of Conductor Drum
- iii) Breaking Load test
- iv) Elongation Test
- v) Resistance test
- vi) Measurement of dia-meter of individual Aluminum Alloy Wire.
- vii) Verification of Water Proof marking on Drum as per Specification.

NOTE: (a) In addition to above tests remaining acceptance tests as per relevant IS shall also be conducted at CTL provided the testing facility is available at CTL for these tests time to time. Only those tests shall be conducted for which testing facilities are available in NIGAM's Lab.

(a) The Officer In charge of central Testing Lab (CTL) of Nigam shall send copies of test reports to the Purchasing Officer / Sr. AO (CPC), consignee and the supplier.

(b) The payment of every lot shall be released after receipt of successful test report from Nigam's Lab (CTL) on the samples selected from the material received in Nigam stores.

20.3 CRITERIA FOR ACCEPTANCE:

(a) Rewinding Test (Measurement of Length and weight):

The results of measurement of length test shall be made applicable to all drums contained in each lot/sub-lot by making deduction of less length of conductor in a sample drum.

The net calculated weight of various type of conductor corresponding to minimum prescribed diameter in IS of Aluminum Strand, Steel Strand (ACSR Conductor) and Aluminum Alloy Strand (AAA Conductor) shall be as under:

a) ACSR WEASEL	124.32 Kg./Km.
b) ACSR DOG	384.33 Kg./Km.
c) AAA C (Equivalent Size to WEASEL)	91.78 Kg./Km.

If weight of conductor corresponding to minimum prescribed diameter as per IS found less up to 2% in respect to measured length the lot shall be acceptable otherwise the entire lot for which sample drum represents shall be rejected and to be replaced by the supplier.

(b) If the sample(s) fail in any test other than length measurement, the entire material in the Lot shall be rejected and shall have to be replaced by the supplier.

c) If the contractor / supplier fails to lift the material declared rejected or any part thereof from the consignee within a period of 15 days from the date of dispatch instruction from the purchaser, the purchaser shall be entitled to effect recovery along with other actions as per Clause No. 1.62 of Section-II (General Condition of Contract).

21.0 TEST CHARGES:

All test charges incurred towards test checking of the material received in our stores shall be borne by the NIGAM.

22.0 DETAILS OF PAST EXPERIENCE:

The details of past orders executed by the bidder may be indicated in the relevant **Schedule- VII & VII A**. The bidder must furnish the documentary evidence like copy of purchase order placed for detailing of past supplies.

23.0 CHALLENGE TESTING CLAUSE:

The other manufacturer can also request challenge testing for any test based on specification. The challenger would request for testing with testing fee. The challenge test fees are proposed at least three times cost of testing. This is likely to deter un-necessary challenges. The challenger would have the opportunity to select the sample from the store and any such challenge should be made within the guarantee period. The party challenged, the challenger & the utility could witness the challenge testing. The challenged testing would cover all the type tests as per relevant IS.

The challenge test could be conducted at NABL Accredited Laboratory like ERDA, CPRI, Bangalore / Muradnagar / Bhopal. If the values are within limit the product gets confirmed else not confirmed. If the product is not confirmed the manufacturer would pay the challenge fee and challenger would get the fee refunded. However, as a redressal system the challenger would be asked for fresh selection of two more samples from the stores and the same be tested in a NABL Laboratory (which shall be other than previously selected NABL Accredited Lab) at the cost of supplier in presence of party challenged, challenger and the utility. If any one or both samples does not confirmed the tests then the product is said to have failed the tests. In such cases, the manufacturer will be declared as unsuccessful manufacturer for the said product and balance supply shall not be availed and the order shall be cancelled with levy of maximum penalty.