

SCHEDULE 'A'

TECHNICAL SPECIFICATION

FOR

WEATHER PROOF (WP) CABLES

FOR

DISTRIBUTION NETWORK IN MAHARASHTRA

SPEC: NO. RE - II / W.P.CABLE / 2005

MAHARASHTRA STATE ELECTRICITY DISTRIBUTION
COMPANY Ltd.
(MUMBAI)

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NO. RE - II / W.P.CABLE / 2005

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5. **Construction:**

P.V.C. insulated (Type-‘A’ P/V.C. compound conforming to IS-5831 of 1984) and P.V.C. sheathed (sheathing of P.V.C. Type ST-1, compound conforming to IS 5831 of 1984) weather proof cables conforming to IS 694 of 1990 (amended upto date).

I) Single Core:

The conductor shall be insulated with P.V.C. insulation to constitute a core. Further P.V.C. sheathing shall be applied to the core, the overall dimensions being as specified under IS:694 of 1990 amended upto date. The core shall be red / gray in colour and sheathed shall be black.

II) Twin Core flat:

Two insulated cores in accordance with the above covered P.V.C. insulation shall be laid side by side and finally covered with P.V.C. sheathing so as to conform to over all dimensions specified under relevant IS. One insulated core shall be red and the second shall be black and sheath shall be black.

III) Three and four core:

The cables shall be circular in construction with insulation, sheathing, colour coding and laying up of cores as per the provisions of IS:694 of 1990 (amended upto date)

IV) Sequential Marking

Non erasable Sequential Marking of length shall be provided by embossing on outer sheath of the cable for each metre length.

6. **Packing and Marking**

The cables shall be in coils of 100 metres continuous lengths duly wrapped in with polythene or similar packaging material and the coils shall be labeled with the following information.

- a) Name of the manufacturer or brand name and trademark.
- b) Size of the conductor of the cable.
- c) Type of cable and voltage rating.
- d) Number of cores.
- e) Company's order no. and despatch instruction no. if any.
- f) Code no. indicating the date of manufacture and batch no.
- g) IS reference and ISI mark.
- h) Length of cable in coil.
- i) Approx. gross weight.
- j) Other details as per relevant IS.
- k) Sequential marking as per cl. No. 5 (iv)

5% quantity of each size, however, can be supplied in non-standard length which shall not be less than 50 metre.

7. Purchaser's And Manufacturer's Identification.

The manufacturer and the Company shall be identified throughout the length of cable by embossing the manufacturer's name, the Company's name on the P.V.C. sheath. The manufacturer's name/ trade mark and M.S.E.D.C.Ltd. shall be embossed at least once on every metre length of cable, along with sequential marking for each metre length.

8. Size of Cable:

The sizes of cables with voltages grade shall be as per schedule of requirement.

9. Testing Facilities and Details of Equipment:

The supplier/ tenderer shall clearly state as to what testing facilities are available in the works of manufacturer and whether the facilities are adequate to carry out the type, routine and acceptance tests mentioned in IS:694 of 1990 (amended upto date) on the cable including aging test a per Clause 15.4 of IS 694/1990 modified up to date. The facilities shall be provided by the bidder to purchaser's representative for witnessing the test or conducting the tests in the manufacture's works. If any test cannot be carried out at the manufacturer's works, reasons should be clearly stated in the tender.

10. Type Test:

All the type tests in accordance with IS-694/1990 (amended upto date) shall be performed on cable samples drawn by purchaser.

Type tests are required to be carried out from the first lot of supply on a sample of any one size of cable ordered. In case facilities of the type tests are not available at the works of the supplier, then such type tests shall be carried out by the supplier at the independent recognized laboratory at the cost of supplier. Sample for the type test will be drawn by the purchaser's representative and the type tests will be witnessed by him. Supplier, however, can claim exemption from carrying out type tests above, provided such type tests were already conducted for MSEDCLtd in the past within five years and the test certificates thereof submitted to our Chief Engineer (Dist.). Chief Engineer (Dist.) may at his option grant waiver from carrying type tests, if the type test certificates are acceptable in case of other Government recognized laboratories / Test House valid approved Government certificate shall be enclosed alongwith test certificate.

11. Acceptance Test :

The Acceptance Tests stipulated as under shall be carried out on each type of cable offered.

- a) Tensile Test }
- b) Wrapping Test } As per IS 8130/1984
- c) Resistance Test } or its latest version

- d) Test for thickness of Insulation and sheath } As per IS 5831 of 1984 or
- e) Hot Deformation Test } its latest version
- f) Fire Resistance Test }
- g) Insulation Resistance Test }

- | | |
|--------------------------|------------------------|
| h) Tensile Strength & | } |
| Elongation at Break | } |
| i) High Voltage Test | } As per IS 694/1990 |
| (Water immersion Test) | } (Amended up to date) |

12. Routine Test:

All coils shall be subjected to the following Routine Test:

- i) Conductor Resistance Test.
- ii) High Voltage Test (Spark Test) as per IS 694/1990 (Amended upto date)

13. Random Sample Test:

The purchaser at his option may select one coil at random from a lot of 500 coils or part thereof as may be supplied to stores or manufactured at the factory from time to time. The coil so selected shall be subjected to check according to clause 6, 7 & 8 and to all the tests mentioned in IS. The coil must pass all the tests specified below, otherwise the whole lot of 500 or part thereof from which the coil was selected, will be rejected.

- a) Tensile, wrapping and resistance test for Aluminum Conductor.
- b) Test for thickness of Insulation.
- c) Tensile Strength and Elongation at Break.
- d) Thickness of P.V.C. sheath (for P,V,C, sheathed cable only)
- e) Fire resistance test (for P.V.C.)
- f) Voltage test (Both water immersion and spark test)
- g) Insulation resistance test.
- h) Ageing test as per clause 15.4 [Table 9 (c)] of IS 694 of 1990 (amended up to date)

The testing under this clause will be done in any laboratory of the Company's choice including Company's laboratory. The testing charges will be borne by the supplier.

The supplier will inform the manufacturing programmes to this office. Notice for testing will be given by the Company by ordinary post to the supplier and date of test may not be altered to the convenience or request of the supplier. The supplier is at liberty to be present during testing.

14. SCHEDULES:

14.1 The tenderer shall fill in the following schedule which form part of the offer.

Schedule 'C' - Tenderer's Experience.

14.2 The tenderer shall submit the list of orders for similar type of equipments, executed or under execution during the last three years, with full details in the schedule of Tenderer's experience (Schedule 'C') to enable the purchaser to evaluate the tender.

SCHEDULE - 'C'

SCHEDULE OF TENDERER'S EXPERIENCE

Tenderer shall furnish here a list of similar orders executed/under execution by him to whom a reference may be made by Purchaser in case he considers such a reference necessary.

Sr. No.	Name of the client & description of order	Value of order	Period of supply and commission-ing	Name & address whom reference may be made
1	2	3	4	5

Name of the firm -----

Name & signature of tenderer -----

Designation -----

Date -----