

**SPECIFICATION FOR 4 CORE, 1.5 sqmm ALUMINIUM POLYSTER SHIELDED
PVC CABLE FOR INSTRUMENTATION**

1.0 SCOPE

1.1 This specification covers the requirements of 4 core Aluminium polyster shielded, Polythene insulated PVC sheathed cable to be used in Railway coaches to avoid EMI interferences.

2.0 TECHNICAL REQUIREMENTS

2.1 Conductor

Each core shall have 48 strands of 0.2mm of annealed tinned high conductivity copper.

2.2 Insulation

Tinned conductor shall be covered with Polythlene. The radial thickness of the insulation shall be 0.6mm. The colour of the core shall be Red, Yellow, Blue, and Green.

2.3 Sheathing

Protective PVC jackets shall be provided as sheath. The radial thickness of sheath shall be 0.9 mm. Colour of sheath shall be grey.

- 2.4
- i) Overall diameter of the cable shall not exceed 12mm.
 - ii) DC resistance of the conductor shall not exceed 13.70 Ohms.
 - iii) Nominal capacitance value between one conductor and other with all other conductors connected to the shield shall not exceed 131 pF/Meter.

2.5 Laying up and screening

Four core shall be formed and layed. All the four core after laying shall be shielded using Aluminium polyster tape. Shield coverage shall be 100%.

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3.0 TESTS

3.1 High voltage test

The cable shall withstand in the dry state an AC voltage of 1500V RMS as per IS:694-90.

3.2 Insulation resistance test

The value of insulation resistance for polythene insulation shall be 10^{13} ohm-cm (minimum) at 27 deg.C. Insulation resistance for PVC sheath shall meet the requirements of the insulation resistance as per the test specified in IS:694-1990.

3.3 Flammability test

This test to be conducted as an acceptance test as per IS:10810 (Pt-53) latest.

4.0 WARRANTY

The supplier shall give guarantee of 18 months from the date of supply or 12 months from the date of commissioning whichever is earlier. Any defect noticed during this period due to defective design, material or workmanship shall be replaced by the supplier free of cost.

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