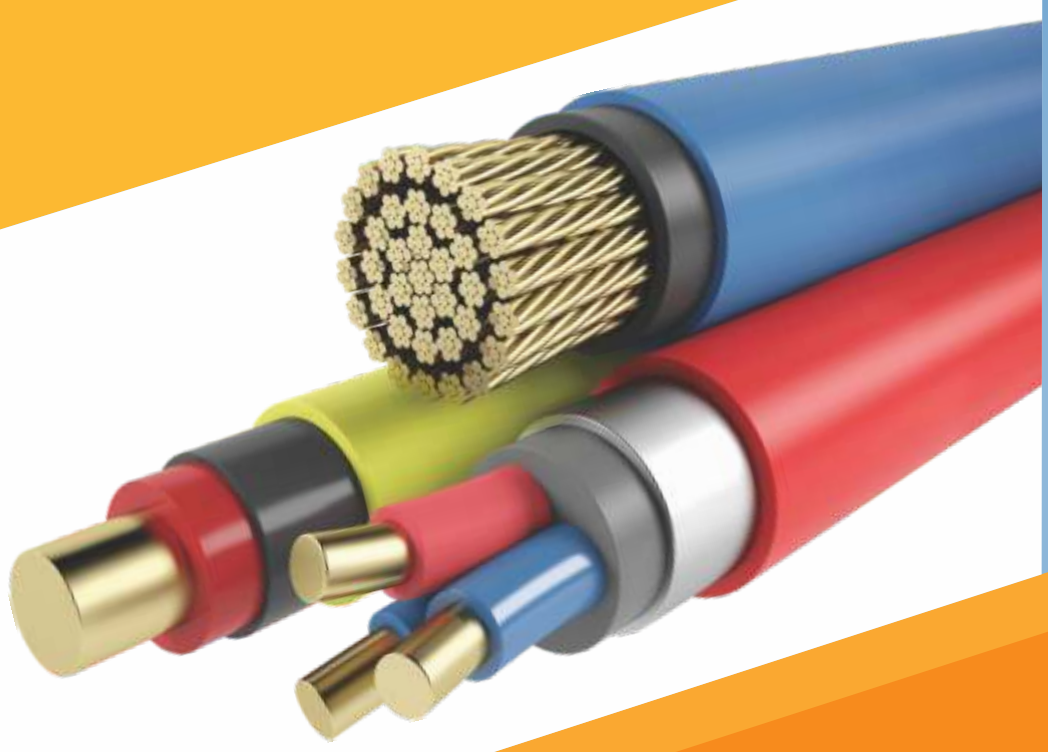
www.erda.org

ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION



CABLES & WIRES LABORATORY

Electrical Research and Development Association (ERDA) is a not for profit organization of India involved in Testing, Calibration, Evaluation and Research & Development. ERDA was established in 1974 by the Indian Electrical Industries & Utilities with the support of State & Central Government of India. In order to meet the challenges of sustainability and growth in power sector and to meet the expectations from manufacturing industries as well as power utilities, ERDA has re-organized itself under three verticals namely Testing and Evaluation, Field Services, R&D and Expert Services.

Various types of cables are used for household wiring, domestic appliances, railways, industrial and urban distribution systems, safety alarms and special applications in hospitals, lifts and conveyers. Any abnormal situation may become critical due to failure of a cable and therefore various national/international standards are in force to govern the quality of a cable.

ERDA is fully equipped with all required facilities for testing and evaluation of PVC, XLPE, Elastomer, Aerial bundelled, FR-FRLS, FS, LT/HT cables up to 245kV and their respective raw materials.

TESTING AND EVALUATION

Key Test Capabilities at a Glance

Complete testing facilities for Type Tests, Acceptance Tests, Routine Tests as well as Special Test are available in accordance with national and international standards.

Non Electrical Test & Capability

- Accelerated Ageing Ovens
- Thermal Stability Test
- Automatic Hot Set Test
- Kelvin Double Bridge
- Digital High Resistance Meter - 10^{15} Ohms, 1000V
- Flexible, Bending, Wear Resistance, Abrasion Resistance Test Apparatus
- Universal Testing Machine
- Profile Projector

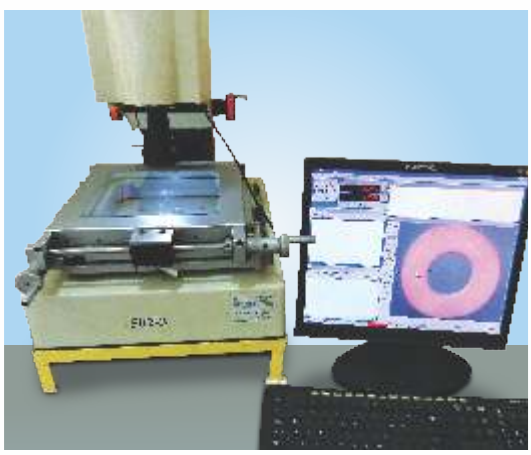
Flammability and Special Test Capability

- UV / Xenon Weathering
- Oxygen Index & Temperature Index
- Smoke Emission - $3m^3$ Chamber
- Flammability on Single Cable / Bunched Cable as per IS, IEC, BS and IEEE
- Fire Survival - Cat C, W and Z
- Toxicity Index
- Flammability Test as per IS, IEC, ASTMD, SS-424/1475

Electrical Tests and Capability

- Partial Discharge Test Facility for upto 245kV cables
- High Current Source (Induction Type) Test Facilty upto 4000A
- High Voltage - 600 kV RMS
- Universal Schering Bridge (Tan Delta Bridge)
- Online 120kA Short Circuit Test Laboratory
- Impulse Test Facilities upto 1600 kVp, 80 kJ

High Accuracy 0.2 Class Kelvin Double Bridge



Advanced Vision System for Dimension Measurement

Fire Survival-Category CWZ Set Up

FIELD SERVICES

Off-Line

- Capacitance and Tan-Delta at Power Frequency
- VLF based Tan Delta and PD (for MV & HV Cables)
- Polarization Index (PI) and Insulation Resistance
- Time Domain Reflectometry (TDR) for Cable Faults

RESEARCH & DEVELOPMENT AND EXPERT SERVICES

A partial list of major R&D Projects completed by the Cables Laboratory include:

- Development of fire resistant coating for cables
- Study of electrical treeing behaviour in XLPE cables used for working voltages upto 33kV and remedial measures
- Development of FRLS cable compounds by chemical modification of PVC
- Study on the effect of UV radiation on fire resistance characteristics of FRLS cables
- Online condition monitoring of cables installed in Nuclear Power Plants
- Development of nano filler based zero halogen fire resistant cable compound
- Condition monitoring of HT cables by measurement of Capacitance & tan-delta, by trending analysis using reference data of cable in good health

PRODUCTS EVALUATED

- Paper Insulated Lead Sheathed Cables
- PVC Insulated armoured / unarmoured cables
- PVC Insulated (Heavy Duty) electric cables: For Working voltages from 3.3kV upto & including 11kV
- PE Insulated Cables
- Cables for Motor Vehicle
- Flexible cables for lifts and other flexible connections
- XLPE Insulated Cable: For working voltages from 3.3kV upto and including 66kV
- PVC Winding wires for submersible motor
- Welding Cables
- Elastomer - Rubber insulated cables from 3.3kV upto & including 33kV
- Elastomer Insulated Cables for use in mines
- Aerial Bunched Cable
- Cable accessories for Power Cable: For working voltages from 1.1kV upto and including 33kV

सत्यमेव जयते
Government of India
Ministry of New and Renewable Energy

Certificate No: TC-5389

मानकः पथप्रदर्शकः
Bureau of Indian Standards

ENERGY IS LIFE
BEE
CONSERVE IT

Computerized Smoke Density Meter

Programmable Xenon Arc Weather Chamber

Humidity Chamber

ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION

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