A Publication of ELTEK International Laboratories

Data Journal

Material Properties Lab

www.ELTEKlabs.com

ELTEK's Material Properties Lab has the capability to perform over 300 tests on a wide variety of Electrical Insulation Materials

Some examples of ASTM methods:

ASTM D-2303
ASTM D-3638-CTI
ASTM D-2132
ASTM D-150
ASTM D-495
ASTM D-570
ASTM D-257
ASTM D-3874

Some examples of UL test methods:

UL 746-A
UL 746-C
UL 94

Some examples of IEC test methods:

IEC 60695-2-13
IEC 60587
IEC 60112
IEC 60695-2-10

Get Quick Answers to Essential Questions on EIM(s)

ELTEK International Laboratories Material Properties Lab provides testing on a wide variety of Electrical Insulation Materials (EIM) for the electrical insulation industry.

Testing of EIM at ELTEK provides data that can be used as valuable pre-production information on various characteristics of an EIM Such detail will aid manufacturers in reducing production costs and improve the effectiveness of R & D expenditures.

Following current international industry approval standards ELTEK Labs is able to assist customers in the testing and development of products that meet the requirements of today's fast-paced and highly technological world.

Questions and concerns about the flammability, ignitibility, tracking susceptibility or the ability to withstand severe atmospheric conditions coupled with electrical discharges, can be answered.

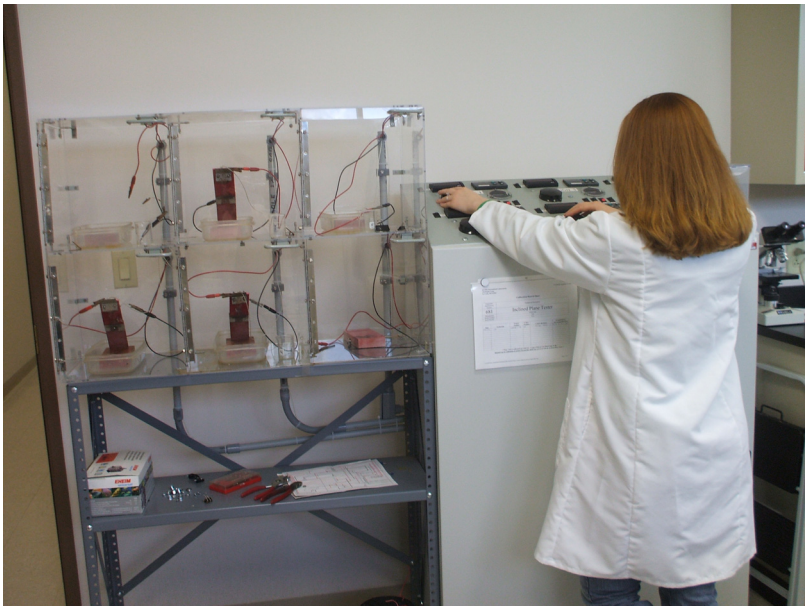
Some of the more commonly requested atmospheric exposure and tracking tests include:

- ASTM D-2303; IEC 60587 and UL 76A Sec. 25 – Liquid Contaminate Inclined Plane Tracking and Erosion of Insulation Materials
- ASTM D-3638; IEC 60112 and UL 746A Sec. 23 – Comparative Tracking Index and Comparative Tracking Performance Level Categories of Electrical Insulation Materials
- ASTM D-2132 – Dust Fog Tracking and Erosion

Dry Surface Tracking testing done in standard laboratory condition on EIM as received, or with specialized conditioning per our customer's request.

Some fo the more commonly requested dry surface tracking tests include:

- ASTM D-495, UL 746A Sec.22 – High Voltage-Low Current-Dry Arc Resistance and related Performance Level Categories of EIM
- \UL 746A Sec. 24 – High-Voltage Are-Tracking Rate Performance Level Categories of Electrical Insulating Materials (HVAT)
- UL746A Sec. 32 – High-Current Arc Ignition Performance Level Categories (HCAI)
- UL 746A Sec. 33 – High-Voltage Arc Resistance to Ignition Performance Level Categories (HVAR)



Technician monitoring progress of Inclined Plane Specimens

ELTEK Labs Material Properties Testing Lab also does Fire Hazard Testing using several of the following test methods:

1. ASTM D-3874: IEC 60695-2-20 and UL 746A Sec. 31 – Hot Wire Ignition and Persistence to Ignition Performance Level Categories
2. ASTM D-6194 – Glow Wire Ignition of Materials; IEC 60695-2-10 – Glow Wire Apparatus Common Test Procedure; IEC 60695-2-11 – Glow Wire Flammability Test Methods for End Products; IEC 60695-2-12 – Glow Wire Flammability Index (GWFI); IEC 60695-2-13 – Glow Wire Ignitibility Test Method for Materials; UL 746A Sec.34 – Glow Wire Ignition Temperature (GWIT) and UL 746 C Sec. 73 – Glow Wire Ignitibility Test

Glow Wire Ignition Temperature (GWIT)
IEC 60695-2-13, the GWIT, is expressed as the temperature which is 25 K (30K between 900C and 960 C) higher than the maximum temperature of the tip of the golw-wire, which does not cause ignition of the test specimen of the giben thickness during three subsequent tests

Glow-Wire Flammability Index (GWFI)
IEC 60695-2-12. The GWFI, is expressed as the highest test temperature during three subsequent tests for a test specimen of a given thickness, at which one of the following conditions is met;

1. Flames or glowing of the test specimen extinguish within 30sec. after removal of the glow-wire, and there is no ignition of the wrapping tissue placed underneath the test specimen

2. There is no ignition of the test specimen

ELTEK Labs also tests flammability of EIM(s) to UL 94:

- Horizontal Burning Test (HB)
- 50W (20mm) Vertical Burning Test (V-1, V-1 or V-2)
- 500W (125mm) Vertical Burning Test (5VA or 5VB)
- Thin Material Vertical Burning Test (VIM-0, VIM-1, or VIM-2)

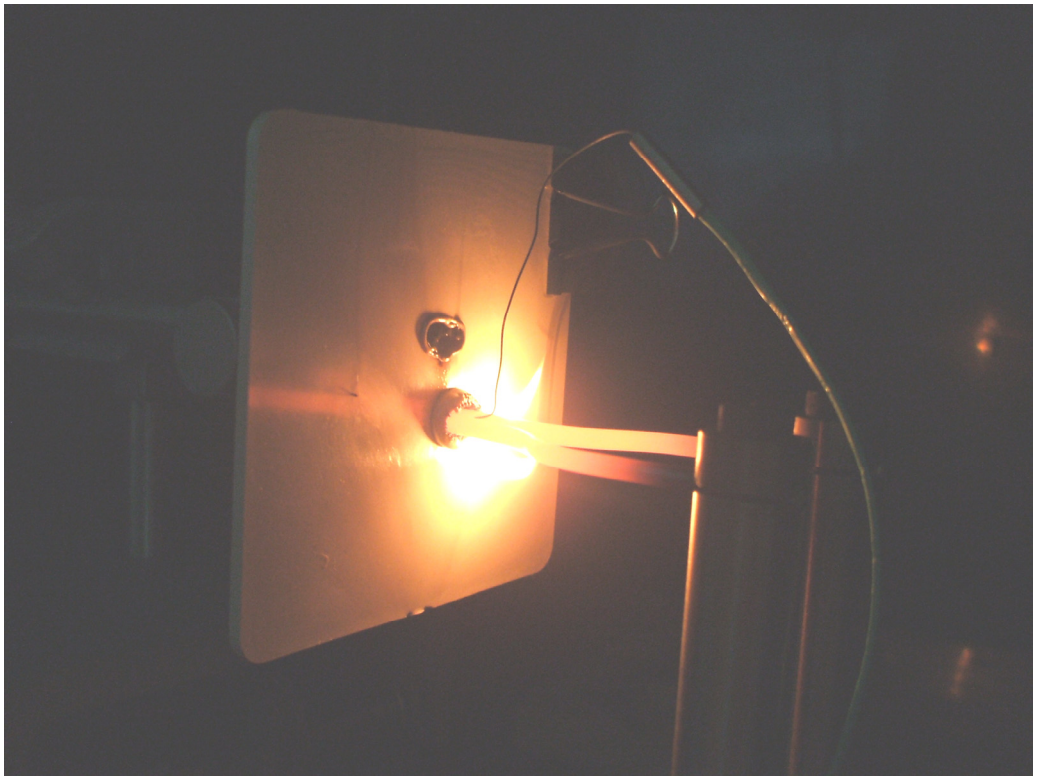
ELTEK International Labs Material Properties Lab also provides testing data for EIM(s) using standard test methods for Surface and Volume Resistivity, Dielectric Constant as well as Dissipation Factor. These tests and test methods are also designed to assist with the R & D of safer insulation materials for the industry.

Additional Common Material Properties Test Methods:

- ASTM D-257 and UL 746A Sec. 21 – Standard Test Method for DC Resistance or Conductance of Insulation Materials

- ASTM D-150 – Standard Test Methods for AC Loss Characteristics and Permitivity (Dielectric Constant) of Solid Electrical Insulation

While this is just a sampling of the more common tests and methods, there are many other "Short Term" tests performed at ELTEK Labs that can be performed upon request.



Glow-wire test specimen

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