इंटरनेट मानक

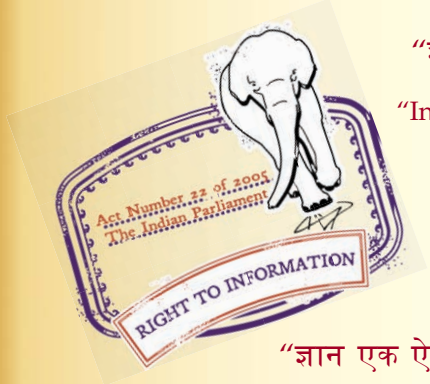
Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

"जानने का अधिकार, जीने का अधिकार"
Mazdoor Kisan Shakti Sangathan
"The Right to Information, The Right to Live"

"पुराने को छोड नये के तरफ"
Jawaharlal Nehru
"Step Out From the Old to the New"

IS 10810-52 (1984): Methods of test for cables, Part 52: Drainage test [ETD 9: Power Cables]



"ज्ञान से एक नये भारत का निर्माण"
Satyanarayan Gangaram Pitroda
"Invent a New India Using Knowledge"

"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

BLANK PAGE

Indian Standard (Reaffirmed 2001)

METHODS OF TEST FOR CABLES

PART 52 DRAINAGE TEST

Power Cables Sectional Committee, ETDC 59; Panel for Methods of tests for Cables, ETDC 59/P1 [Ref : Doc : ETDC 59 (2240)]

1. Scope — Covers the test procedure to determine the non-draining properties of the compound used for impregnating the paper di-electric of mass-impregnated non-draining type paper insulated electric cable.

2. Significance — When a cable is installed vertically or at an incline, impregnating compound of paper insulation tends to run down whereby the cable insulation gets 'dry' on the upper section of the cable and the drained compound accumulates at the lower end. This may lead to electrical failure in the dried up insulation at upper part and mechanical failure by bursting of metal sheath at the lower part. The susceptibility of such drainage is mitigated by use of a non-draining compound which does not undergo a change in viscosity at normal operating temperature of the cable. This test would assess the non-draining quality of the impregnating compound to prove the suitability of cable for installation in inclined or vertical positions.

3. Terminology — Cable is termed as non-draining, when the specified length of the cable is held vertically at a temperature equal to the operating temperature of the cable and it does not exhibit any significant drainage of the compound exceeding the specified limit.

4. Apparatus

4.1 *Thermostatically Controlled Oven* — Where the temperature 65 to 80 ± 1°C can be maintained.

4.2 *Weighing Balance* — Least count 10 mg.

5. Material — No material other than the specimen is required for performing this test.

6. Test Specimen

6.1 The test specimen shall be about 1 metre long. The specimen shall be prepared by removing all protective coverings over metallic sheath. This is sealed at both ends without application of heat, space being left at one end for the collection of any drained compound. The sealing cap for collection of the compound shall be weighed before it is taken for sealing.

6.2 *Number of Specimens* — One.

7. Conditioning — No conditioning is required for this test.

8. Procedure

8.1 The test specimen as sealed (*see* **6.1**) shall be kept vertically with the drainage space at the lower end in a thermostatically controlled oven preset to the appropriate temperature given below :

Voltage Designation kV	*Type*	*Test Temperature* °C
Upto and including 6·6/6·6	All types	80
,, ,, 6·35/11 and 11/11	Screened single core and three core	70
,, ,, 6·35/11 and 11/11	Belted three core	65
,, ,, 12·7/22	All types	65
,, ,, 19/33	All types	65

The sample shall be so maintained continuously for 7 days (168 hours) and at the end of the period, the specimen shall be removed and allowed to cool in the same vertical condition.

8.2 When the specimen attains the room temperature, the weight of the compound collected in the preweighed sealing cap after removing it from the specimen shall be determined using the weighing balance. The length and the diameter under the sheath is measured and the volume of interior of sheath is calculated.

Adopted 14 March 1984 Gr 1

INDIAN STANDARD INSTITUTIONS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

9. Tabulation of Observations

Sample No.	*Length of Test Specimen, L* cm	*Diameter of Specimen Under the Sheath, D* cm	*Weight of Cap Before Test, W_1* g	*Test Temperature* °C	*Weight of Cap After Test, W_2* g	*Density of Compound, S* g/cm³

10. Calculation

a) Volume of cable under the sheath $V_1 = \frac{\pi}{4} \times D^2 \times L$ cm³

b) Volume of drained compound, $V_2 = \frac{W_2 - W_1}{S}$ cm³

c) Drainage, percent $= \frac{V_2}{V_1} \times 100$

11. Report

11.1 *Reference Specification* _____

Sample No.	*Volume of Cable Under Its Metal Sheath* cm³	*Volume of Drained Compound* cm³	*Drainage* Observed percent	*Drainage* Specified percent

11.3 *Conclusion* — Specimen meets/does not meet the requirement of the specification.

Printed at New India Printing Press, Khurja, India