

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 छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

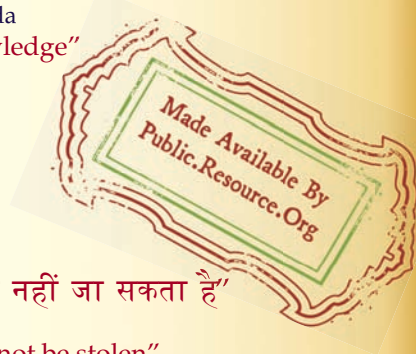
IS 10810-24 (1984): Methods of test for cables, Part 24:
Water soluble impurities test of insulating paper [ETD 9:
Power Cables]



“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”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE



Indian Standard

METHODS OF TEST FOR CABLES

PART 24 WATER SOLUBLE IMPURITIES TEST OF
INSULATING PAPER

1. Scope — Covers the procedure of determining water soluble impurities (if any) present in the insulating paper for electric cables.

2. Significance — This test is intended to determine the extent of water soluble impurities in paper since excessive impurities may deteriorate the insulating property of paper insulation in presence of moisture during the service life of the cable.

3. Terminology — The amount of water soluble impurities present is expressed as the percentage by mass soluble in water.

4. Apparatus

4.1 Glass Beaker — Capacity 400 ml, with a watch glass.

4.2 Measuring Cylinder — Capacity 100 ml.

4.3 Evaporating Dish — Capacity 100 ml.

4.4 Balance — Accuracy 1 mg.

5. Material — Double distilled water.

6. Test Specimen — A representative sample of paper weighing 5.0 g shall be cut off and weighed to an accuracy of 1 mg. These weighed samples shall then be cut into small pieces.

7. Conditioning — The paper specimen shall be conditioned by first partially drying it by subjecting it to a temperature of 60°C for 10 minutes and then freely exposing it in an atmosphere having relative humidity of 65 ± 2 percent and a temperature of $27 \pm 2^\circ\text{C}$ for a period of not less than 24 hours.

8. Procedure

8.1 The conditioned specimen shall be weighed.

8.2 The conditioned papers shall be placed in the beaker with 200 ml of distilled water. The beaker shall then be covered with a watch glass to prevent entry of dirt and placed on a boiling water bath. This condition shall be maintained until the fibres of paper have separated, distilled water being added to keep constant volume in the beaker. The quantity of distilled water used shall be noted. The contents of the beaker shall then be filtered through a fine filter paper (such as Whatman No. 42) and a measurement made of the volume of the filtrate which shall then be drained into an accurately weighed evaporating dish. The filtrate shall be evaporated and the residue dried to a constant mass at a temperature of $105 \pm 2^\circ\text{C}$.

8.3 A blank determination shall then be carried out of the distilled water by using the same quantity as used for extracting the paper.

9. Tabulation of Observations

Sample Number	Weight of Conditioned Test Sample W_1	Weight of Empty Dish W_2	Weight of Dish and the Mass of Filtrate After Evaporation W_3	Weight of Dish and the Mass After Evaporation of the Blank W_4	Corrected Weight of Soluble Impurities After Deducting the Weight of Blank $W_3 - W_4$

Adopted 14 March 1984

© July 1985, BIS

Gr 1

IS : 10810 (Part 24) - 1984

10. Calculation

10.1 The percentage soluble impurities = $\frac{(W_3 - W_4) - W_2}{W_1} \times 100$

10.2 The value so obtained shall be corrected to allow for the water retained in the sample and filter paper by multiplying the result of the calculation by k ,

where

$$k = \frac{200}{\text{Volume of filtrate (ml)}}$$

11. Report

11.1 Water Soluble Impurities Test of Insulating Paper

Cable Type

Batch No./Lot No.

Cable No./Drum No.

Date of Testing

11.2 Results

Reference Specification _____

Sample No.	Percentage Soluble Impurities	
	Observed	Specified

Note — If necessary, the above test may be carried out on duplicate samples. The percentage of water soluble impurities as measured in two tests should not differ by more than 0.1.

11.3 *Conclusion* — The specimen meets/does not meet the requirements of the specification.