IS 10810-27 (1984): Methods of Test for Cables, Part 27: Ash Content Test of Insulating Paper [ETD 9: Power Cables]

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

Indian Standard

METHODS OF TEST FOR CABLES

PART 27 ASH CONTENT TEST OF INSULATING PAPER

1. Scope — Covers method for determination of the ash content in insulating paper for electric cables.

2. Significance — Any inorganic impurity in insulating paper tends to reduce its dielectric property. Since the presence of inorganic impurities cannot be eliminated, so this test is performed to determine the quantity of inorganic impurities in insulating paper.

3. Terminology — The ash content of the paper is expressed as percentage by mass (calculated on dry basis).

4. Apparatus

4.1 *Crucible* — Of platinum or of fused aluminium or of porcelain or of silica having tightly fitting lid.

4.2 *Desiccator*

4.3 *Muffle Furnace*

4.4 *Balance* — Accuracy 0·1 mg.

5. Material — No material other than specimen is required.

6. Test Specimen — Paper sample, 1 g *Min.*

7. Conditioning — The paper shall be dried to constant mass at a temperature of 100 to 105°C and weighed to an accuracy of 0·1 mg in an ignited and weighed crucible which does not change its mass under ignition conditions.

8. Procedure

8.1 The test sample reweighed after conditioning shall be ignited in the crucible in a muffle furnace or by means of a gas burner. To avoid loss of small particles, the lid of the crucible shall be in place during the initial ignition of the paper. At first the paper shall be heated to charring and then the temperature shall be raised to 900 ± 25°C. When this temperature is attained the lid of the crucible shall be slid to one side until combustion is complete, care being taken at all times to protect the contents of the crucible from air draughts.

8.2 When the paper is completely burnt, as indicated by the absence of black particles, the crucible with its lid on shall be removed to a desiccator and allowed to cool to ambient temperature.

8.3 The crucible and its contents shall then be weighed to nearest 0·1 mg and the ignition and weighing repeated until the mass is constant.

9. Tabulation of Observations

Sample No.	*Weight of the Sample taken (Conditioned) W_1*	*Weight of Empty Crucible W_2*	*Weight of the Crucible after Ignition Including Content W_3*	*Weight of Ash $W_3 - W_2$*

Adopted 14 March 1984 Gr 1

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10. Calculation — Ash content, percent $= \frac{W_3 - W_2}{W_1} \times 100$

11. Report

11.1 *Ash Content of Insulating Paper*

Cable Type

Batch No./Lot No.

Cable No./Drum No.

Date of Testing

11.2 *Results*

Reference specification _____

Specimen No.	*Percentage of Ash Content*	
	Observed	Specified

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

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