

इंटरनेट

मानक

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“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 10810-30 (1984): Methods of test for cables, Part 30:
Hot set 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”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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*Indian Standard***METHODS OF TEST FOR CABLES****PART 30 HOT SET TEST**

1. Scope — Covers a method for determination of elongation and permanent set under load at specified temperature of insulation of electric cables.

2. Significance — Many important properties of cable vary depending upon the degree to which the material is cross-linked. This test method serves as a means for determining whether or not the depending properties are fully realised after cross-linking.

3. Terminology — See IS : 1885 (Part 32) - 1971 'Electrotechnical vocabulary: Part 32 Cables, conductors, and accessories for electricity supply'.

4. Apparatus

4.1 Oven — Electrically operated and thermostatically controlled heating cabinet (oven) with controlled air flow (see IS : 6365-1971 Specification for laboratory electric oven). The air shall enter the oven in such a way that it flows over the surface of the test pieces and leaves near the top of the oven. The oven shall have a rate of air flow such as to give 8 to 20 changes per hour.

4.2 Grips — Suitable for suspending test specimen from an upper grip in the oven and weight to be attached to a lower grip attached to the test specimen.

4.3 Scale — To measure elongation.

4.4 Dies — In accordance with 4.1 of IS : 10810 (Part 7)-1984 'Methods of test for cables: Part 7 Tensile strength and elongation at break of thermoplastic and elastomeric insulation and sheath'.

4.5 Thermometer — Range 200°C, least count 1°C.

4.6 Suitable Weight

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

6. Test Specimen — In accordance with 6 of IS : 10810 (Part 7)-1984.

7. Conditioning — All the test specimens shall be kept at a temperature of $27 \pm 2^\circ\text{C}$ for a period of not less than 16 h immediately before test.

8. Procedure

8.1 The distance between marker lines shall be measured.

8.2 The test pieces shall be suspended in the oven and weights attached to the bottom grips to exert a force of the value specified for the material in the relevant cable standard.

8.3 After 15 min in the oven at the temperature specified for the material in the relevant cable standard, the distance between the marker lines shall be measured. If the oven does not have a window and the oven door needs to be opened to make the measurement, the measurement shall be made not more than 30 s after opening the door.

In the case of dispute the test shall be carried out in an oven with a window and the measurement made without opening the door.

8.4 The tensile force shall then be removed from the test piece (by cutting the test piece at the lower grip), and the test piece left to recover for 5 min at the specified temperature.

8.5 The test pieces shall then be removed from the oven and allowed to cool slowly to ambient temperature, after which the distance between the marker lines shall be measured again.

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9. Tabulation of Observations

<i>Specimen No.</i>	<i>Initial Length Between the Gauge Mark, A mm</i>	<i>Length of the Gauge Mark after 15 Min with Load, B mm</i>	<i>Length of the Gauge Mark at Room Temperature after Test, C mm</i>
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10. Calculation

$$\text{The percentage hot set elongation} = \frac{B - A}{A} \times 100$$

$$\text{Permanent set percent} = \frac{C - A}{A} \times 100$$

11. Report

11.1 Hot Set Test for Cable Insulation

Reference specification

<i>Specimen No.</i>	<i>Observed Values, Percent</i>		<i>Specified Values, Percent</i>	
	<i>Hot Set Elongation</i>	<i>Permanent Set</i>	<i>Hot Set Elongation</i>	<i>Permanent Set</i>

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