

इंटरनेट

मानक

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IS 10810-1 (1984): Methods of test for cables, Part 1:
Annealing test for wires used in conductors [ETD 9: Power
Cables]



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“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

“पुनर्विज्ञापित १९९६”
 “RE-AFFIRMED 1996”

METHODS OF TEST FOR CABLES

PART 1 ANNEALING TEST FOR WIRES USED AS CONDUCTORS

1. Scope — Covers method for determining the elongation properties of annealed copper wires, aluminium wires for welding cables and solidal conductors used in electric cables.

2. Significance — As the conductor of a cable is subjected to twisting and bending, it is necessary that it should be flexible enough to take any desired bend without breaking. This test takes into consideration the extent of work hardening which may be caused during the stranding and laying up process.

3. Terminology

3.1 Gauge Length — Original length of that portion of the test specimen over which strain or change of length is determined.

3.2 Elongation at Break — Increase in gauge length of a tension test specimen, measured after fracture, within the gauge length, expressed as a percentage of the original gauge length.

4. Apparatus

4.1 Tensile Testing Machine — Automatic, having capacity to meet the requirement of this test and the rate of separation of jaws as specified in 8.1. The grips shall be such as to firmly hold the test specimen.

4.2 Plane Faced Micrometer — Least count 0.01 mm.

4.3 Suitable Scale — Least count 1 mm.

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

6. Test Specimen

6.1 The gauge length for measurement of elongation of wire shall be 250 mm. The total length of the specimen shall be at least equal to gauge length plus the length of the wire required for the full use of grips employed. The specimen shall be straightened by hand, if necessary and the gauge marks shall be scribed lightly with dividers or drawn with ink, as preferred.

6.2 Number of Specimens — One.

7. Conditioning — No pre-conditioning is required.

8. Procedure

8.1 The test specimen is fixed between the two heads of the machine by means of grips. The load is applied gradually and uniformly to the wire having an original gauge length of 250 mm till it gets fractured. The rate of elongation or rate of separation of two heads shall not be greater than 100 mm/min.

8.2 The elongation is measured on the gauge length after the fractured ends have been fitted together. The determination shall be valid irrespective of the position of the fracture, if the specified value is reached. If the value is not reached, the determination shall be valid only if the fracture occurs between the gauge marks and not closer than 25 mm to either mark.

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