

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 10810-36 (1984): Methods of test for cables, Part 36:
Dimensions of armouring material [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 36 DIMENSIONS OF ARMOURING MATERIAL

1. Scope — Covers method for measurement of dimensions of materials used for armouring of electric cables, as purchased or as taken out from the finished cable, without removing the zinc coating in the case of galvanized materials.

Note — Armouring materials are generally in the form of wire, strip or tape. Measurements for the following dimensions are covered:

- a) *Wire* : Diameter;
- b) *Strip* : Outer width, thickness and radius of curvature; and
- c) *Tape* : Width and thickness

2. Significance — Armouring of electric cables has to perform the following functions:

- a) Mechanical protection against accidental damage,
- b) Ability to withstand pulling force while laying, and
- c) To provide a path for earth fault current.

All these parameters have a bearing on the dimensions of the armour. This test is carried out to check whether the armour has the designed dimensions for any particular application.

3. Terminology — See IS : 3975 - 1979 'Specification for mild steel wires, strips and tapes for armouring of cables (*first revision*)'.

4. Apparatus

4.1 Vernier Calliper — Suitable for inside as well as outside measurements with a least count of 0.01 mm.

4.2 Micrometer Screw Gauge — Fitted with ratchet-head, least count 0.01 mm.

4.2.1 The moveable nose of the micrometer shall have plane circular face whereas the fixed nose shall have a plane circular face, ball point or needle point as follows:

- a) *Wire* : Plane circular face,
- b) *Strip* : Ball point or needle point, and
- c) *Tape* : Plane circular face or ball point.

4.3 Curvature Gauges — Suitable for measuring radii of curvature in the range 5 to 50 mm, 0.5 mm accuracy.

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

6. Test Specimen

6.1 The test specimen shall be a piece of wire, strip or tape, as the case may be, of 300 mm length. It shall be free from scratches, dents and other external irregularities.

6.2 If the test specimen is to be cut from a coil, it shall be taken from the outer end after discarding a minimum length of 300 mm.

7. Conditioning — No conditioning of test specimen is required.

8. Procedure

8.1 The test specimen shall be cleaned to remove extraneous coatings, if any, without damaging the test specimen.

8.2 If the test specimen is drawn from the finished cables it shall be made reasonably straight to the extent possible without damaging it.

8.3 The test specimen shall be marked at three equidistant points (say 50 mm) from the ends and at the middle. The set of measurements made at these points shall be recorded and used to determine the average.

IS : 10810 (Part 36) - 1984

8.4 The measurements shall be made in the following manner:

- a) *Wire* — At each marked point diameter shall be measured in two directions at right angles to each other.
- b) *Strip* — At each marked point outer width shall be measured with outside arms of vernier calliper or by micrometer, the thickness shall be measured by micrometer and radius by curvature gauge.
- c) *Tape* — At each marked point, the width shall be measured by vernier calliper and the thickness shall be measured by micrometer in the centre of the tape width up to 30 mm and at 20 mm from the edge of the tape with larger widths.

9. Tabulation of Observations

Measurement	Wire		Strip			Tape	
	Diameter		Width mm	Thickness mm	Radius of Curvature mm	Width mm	Thickness mm
	X mm	Y mm					
P1							
P2							
P3							

Note — X and Y are diameters measured in two directions at right angles to each other.

10. Calculations

10.1 Average values of respective dimensions shall be calculated as follows:

a) *For Diameter of Wire:*

$$\text{Average value} = \frac{\Sigma X + \Sigma Y}{6} \text{ mm,}$$

b) *For Dimensions of Strip and Tape:*

$$\text{Average value} = \frac{P1 + P2 + P3}{3} \text{ mm.}$$

11. Report

11.1 Test for Dimensions of Armouring Material

Specimen : From Coil/From Finished Cable/Coil No./Cable No.

11.2 Results

Reference specification _____

Type of Material	Dimensions	Observed	Specified		
			Nominal	Minimum	Maximum
WIRE	Diameter				
STRIP	Width				
	Thickness				
	Radius of Curvature				
TAPE	Width				
	Thickness				

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