

# **SPECIFICATION FOR G.I. WIRES.**

## **1.0 FOREWORD**

G.I. Wires of different sizes are used in distribution system for various applications such as earthing of metallic fittings, bearer wire for service cables, guarding of power lines etc.,

## **2.0 SCOPE**

This specification covers details of solid G.I. Wires for use in distribution system.

## **3.0 APPLICABLE STANDARDS**

Except when they conflict with the specific requirements of this specification, the G.I. Wires shall comply with the provisions of IS:280-1978 and IS:7887-1992 or the latest version thereof.

## **4.0 APPLICATION & SIZES**

G.I. Wires covered in this specification are intended for the following applications.

<u><b>Applications</b></u>	<u><b>Size (nominal dia)</b></u>
i) Bearer wire for service cables	- 3.15mm (for single phase services)
ii) Earthing of transformers, poles	- 4mm (for three phase service lines)
iii) Continuous earth wire for 11KV	- 4mm.
iv) Protective guarding at the crossing of overhead power lines with roads, railway tracks and tele-communication lines.	- 3.15, 4 & 5 mm

## **5.0 MATERIAL**

- 5.1 The wires shall be drawn from the wire rods conforming to IS:7887-1992 or the latest version thereof.
- 5.2 The requirements for chemical composition for the wires shall conform to IS:7887.
- 5.3 The wire shall be sound, free from split surface flaws, rough jagged and imperfect edges and other detrimental defects on the surface of the wires.

- 5.4 The wires shall be galvanized with Heavy Coating as per IS: 4826-1979 (275g/m<sup>2</sup>) or the latest version thereof.

## **6.0 GRADES**

G.I. Wires shall be of Annealed Grade with Tensile Strength of 300-550 MPA.

NOTES : 1) 1 MPa = 1N/mm<sup>2</sup> = 1 MN/m<sup>2</sup> = 0.1020 kgf/mm<sup>2</sup>.

2) Restricted ranges of tensile strength in case of galvanized wire may be

Agreed to at the time of enquiry and order.

## **7.0 TOLERANCE ON DIAMETER**

The tolerance on nominal diameter at any section of wire shall not exceed  $\pm 2.5\%$ . Further, the maximum difference between the diameters at any two cross-sections of wires shall not exceed 2.5%.

## **8.0 TESTS**

The following tests shall be carried out in accordance with IS:280 -1978 or the latest version thereof as per sampling criteria stipulated therein.

- i. Dimensional check (dia)
- ii. Visual inspection regarding freedom from defects
- iii. Tensile test.
- iv. Wrapping test (for wire diameters smaller than 5mm)
- v. Bend test (for wire diameter 5mm only)
- vi. Coating test
- vii. Chemical composition

## **9.0 PACKING**

- 9.1 The wires shall be supplied in 50-70 kg coils each having single continuous length. Each coil of wire shall be suitably bound and fastened compactly and shall be protected by suitable wrapping.

- 9.2 Each coil shall be provided with a label fixed firmly on inner part of the coil bearing the following information:

- a) Manufacturer's name or trade mark
- b) Lot number and coil number
- c) Size
- d) Grade
- e) Mass
- f) Length
- g) ISI Certification mark, if any.

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