### Annexure – ‘B’

TECHNICAL SPECIFICATION G.I Wire of different sizes

**Scope:**

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

* 1. 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:7887-1975 or the latest version thereof.

* 1. APPLICATION & SIZES

G.I. wires covered in this Specification are intended for the following applications :

|  |  |
| --- | --- |
| Application | Sizes (nominal dia) |
| Bearer wire for service | 3.15mm (for single phase cables services  4 mm ( for three phase services) |
| Earthing of Transformers, poles & Fittings. | 5mm, 4 mm |
| Continuous Earthwire for. 11 KV lines | 4 mm |
| Protective guarding at the crossing of  over-head power lines with roads,railway tracts and telecommunication lines | 3.15, 4mm, 1.6mm |

* 1. MATERIAL
     1. The wires shall be drawn from the wire rods conforming to IS:7887-1975 or the latest version thereof.
     2. The requirements for chemical composition for the wires shall conform to IS:7887.
     3. The wires shall be sound, free from split surface flaws, rough jagged and imperfect edges and other detrimental defects on the surface of the wires.
  2. GALVANISING

The wires shall be galvanised with ‘Heavy Coating’ as per IS:4826-1979 or the latest version thereof.

* 1. GRADES

GI wires shall be classified into two grades based on their tensile strength :

|  |  |
| --- | --- |
| Grade | Tensile Strength(MPa) |
| Annealed | 300-550 |
| Hard | 550-900 |

* 1. TOLERANCE IN DIAMETER

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

* 1. 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 :

1. Dimensional check (dia) - refer clause 7 above.
2. Visual inspection regarding freedom from defects refer clause 4.3 above.
3. Tensile test
4. Wrapping test (for wire diameters smaller than 5mm)
5. Bend test (for wire diameters 5mm only)
6. Coating test - refer clause 5 above
7. Chemical composition
   1. PACKING

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

* 1. MARKING

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

1. Manufacturer’s name or trade mark
2. Lot number and coil number
3. Size
4. Grade (Soft)
5. Mass
6. Length
7. ISI Certification mark, if any